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The Annual Oration
ON
POST-OPERATIVE LUNG COMPLICATIONS.

Delivered before the Medical Society of London on May 15th, 1911,

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MR. PRESIDENT AND GENTLEMEN,—When the council of the Medical Society honoured me with an invitation to fill the distinguished office of Orator, it was no sense of personal fitness that prompted me to accede to their request, but rather the feeling that such invitations are in the nature of a command. A glance at the subjects which have been treated by previous holders of this office shows that the society wisely allows its Orator an almost unrestricted freedom of choice. One condition, however, a formal lecture of this kind should always fulfil: the subject chosen should be one of general interest, and I trust you will consider that I have not failed in this respect by selecting that of post-operative lung complications. The subject is not a new one. It is probably as old as surgery itself; but none will deny its importance, and no one, I feel sure, would maintain that it deals with a question about which the last word has been said. Indeed, the more we study the question, whether in the literature or by the light of personal experience, the more surely must we conclude that we are still far from understanding the true causes of these complications.

Every hospital surgeon must be well acquainted with these accidents, and, I know, cordially detests them. The physician sees them occasionally, but unfortunately is too often consulted when the mischief is already in full swing, so missing the opportunity of studying the initial stages, which alone are likely to help to a clear appreciation of their nature. And although these troubles appear to be much more common in hospitals than among private patients, there are not, I feel sure, many medical men in large practice who have not, at some time or other, been worried and perplexed by cases of this kind. During the last few years my surgical colleagues at the Middlesex Hospital have very kindly afforded me every facility for studying cases of this nature in their wards, and it is in the main the results of these observations which I propose to lay before you this evening.

It is clearly impossible for me to deal within an hour with all the different morbid states of the lung which may arise in the wake of a surgical operation, and I propose, therefore, to limit myself mainly to cases of pneumonia or bronchopneumonia occurring after operations in which the peritoneal cavity has been opened or the peritoneum severely handled in the course of operations in its immediate neighbourhood, as, for example, in operations on the kidneys; nor is this restriction as arbitrary as might appear at first sight, for it will be found to group together almost every case of so-called or so-diagnosed post-operative pneumonia. It is not a fortuitous circumstance that the question of post-operative lung complications has again been brought into prominence by the great extension of abdominal surgery, and the fact that these accidents are, in the great majority of cases, preceded by abdominal operations seems to me strongly to suggest that it is in conditions peculiar to that class of operations that we ought to look for the causes which underlie the associated troubles. I must still further define my subject by excluding from consideration all cases of general post-operative sepsis, in which lung symptoms are almost always present, for the reason that here so many different influences may be at work that it is often impossible to decide, with any approach to accuracy, which of them is primarily responsible for the associated lung condition.

As regards post-operative complications in general, there is, I think, reason to believe that they are diminishing, partly as a result of improved operation technique, partly, it may be, owing to more rapid operating and to greater care in the selection and administration of the anæsthetic. Similarly every fresh step towards more perfect asepsis must be a step in the same direction, though the total disappearance of lung complications is certainly not, as a distinguished surgeon once suggested to me, merely a question of cleanliness. It is interesting to note that these accidents have been observed, for the most part, in hospitals, and are said to be very rare in private practice. I do not, however, think that we are at present in a position to decide this point finally. My experience leads me to believe that some of these post-operative troubles—especially lobar collapse, which may develop insidiously—are sometimes altogether overlooked or wrongly interpreted, and that a more exact knowledge of their clinical characters will lead to their being more frequently recognised in the future. It must also be borne in mind that private patients are rarely under the continuous supervision of a skilled medical officer, as is the case in a general hospital. This, at any rate, is certain, that before attention was directed to post-operative lobar collapse not a single instance of the condition had been met with in the wards of the Middlesex Hospital, and that since that time (rather more than two and a half years ago) from 15 to 20 well-marked examples of the complication have been placed on record. That they used to occur formerly no one can doubt; the obvious cases were almost certainly diagnosed as pneumonia, while the slighter forms were probably vaguely classified as after-effects. We will consider later whether there are differences of sufficient moment between hospital and private cases to account for the alleged difference in incidence.

THE SHARE OF THE ANÆSTHETIC.

I shall most appropriately introduce my subject by considering for a few moments the relation of the anæsthetic to the subsequent lung trouble. Not many years ago it was a cherished belief among surgeons that pulmonary complications were for the most part a direct result of the anæsthetic, but this view is no longer tenable. In 1900 the subject of ether after-effects was exhaustively discussed at the Society of Anæsthetists. The debate revealed great differences of opinion as to their frequency, some speakers going so far as to deny their existence altogether, and it threw but little light on their pathogenesis. It was pointed out, with much truth, by one speaker in the debate, that after the lapse of a short time (from 24 to 48 hours) it was impossible to be certain that ether was the cause of trouble in any given case, owing to the probable intercurrence of other factors. It was also generally agreed that the terms ether-bronchitis and ether-pneumonia are ill-chosen and misleading, for, notwithstanding much careful investigation, proof is still wanting that ether vapour, in the absence of infective organisms, does more than cause irritation and over-secretion of the bronchial mucous membrane, like any other pungent or acrid vapour. Attention was also drawn to the fact that there is abundant evidence that very similar, if not identical, lung complications may follow chloroform anæsthesia. But it must not be supposed that these considerations relieve the anæsthetic from all responsibility.

Hölscher placed the whole question on firmer ground by his important observation that under ordinary conditions a patient aspirates mucus and saliva into the air-passages during ether anæsthesia. He attributes post-operative pneumonia to direct infection of the lungs by pathogenic organisms which have been carried down into it with the saliva. It has been pointed out, however, with justice that if we are to accept Hölscher's explanation in its entirety, it is remarkable that ether pneumonia is not of more frequent occurrence at all events at the hands of inexperienced administrators. And there is a further difficulty. Why do these complications so often follow operations on the abdominal cavity, and why are they comparatively rare after operations of equal severity in other parts of the body? Hölscher's explanation fails because it only takes into account one of two essential factors. The other, which is present more or less after every abdominal operation, is interference with efficient respiration. This is now generally recognised as being of prime importance, although its effects on the lungs are but little understood. In a susceptible individual either of these factors is capable of causing lung trouble, but it is when they are both present that complications are most likely to arise.

But to return for a moment to the question of the anæsthetic. It has been shown experimentally by Offergeld and others that ether vapour is capable of inducing histological changes in the bronchial and alveolar epithelium in animals.

In most cases these effects are very transient, but it is possible by repeated etherisations to set up inflammatory changes in the lungs. We must therefore admit, in the human lung, the possibility of damage by ether of a nature to pave the way for inflammatory trouble; but I do not think we shall be far wrong in assuming that ether, properly administered to suitable cases, is rarely, if ever, the actual determining cause of pneumonia. It may, and no doubt does, sometimes lead to temporary bronchial irritation with over-secretion and cough, but if the trouble goes beyond this other factors have almost certainly come into play. Nevertheless, we must admit that ether may be an important contributing cause. After-effects are certainly more frequent when it has been badly taken, and I can well believe that a great deal depends on a smooth and successful induction. One has only to watch the efforts of a beginner to appreciate the amount of struggling and cyanosis which may attend faulty administration. It is especially at such moments that aspiration of saliva is likely to take place, and in such cases ether must bear part of the blame for subsequent lung trouble. But faulty administration is not the only cause of aspiration. Respiration, we all know, is often seriously disturbed during the manipulations of the surgeon in the neighbourhood of the diaphragm and elsewhere, unless anæsthesia is very profound indeed, and in these circumstances aspiration may take place, even in the hands of the most experienced anæsthetist.

Induction with ether by the open method appears to be in every way more satisfactory, but I have been told that it is not suitable where long lists of operations have to be got through on account of the longer time required to induce anæsthesia, but if, as I believe, it appreciably diminishes the liability to after-effects, this objection ought not to be allowed to weigh. Ether has also been accused of causing severe pulmonary œdema as an after-effect. Two remarkable cases of this nature, both fatal, have been placed on record by Dr. Hewitt and Dr. Low. I shall have to refer to these cases again later, but mention them here as recorded examples of ether after-effects. The clinical histories, however, strongly suggest that they were both instances of massive collapse of the lung, which condition was present in a marked degree in the one which was submitted to post-mortem examination. In another case, quoted by Dr. Probyn-Williams, it is not unlikely that symptoms of fatal asphyxia, occurring 36 hours after etherisation for removal of the appendix, and certified as acute pulmonary œdema, were also due to massive collapse.

By way of summing up the share of the anæsthetic we may, I think, conclude (1) that ether, *per se*, is probably not a direct cause of pulmonary inflammation, and (2) that respiratory troubles during anæsthesia—whether due to faulty administration, unsuitable method, surgical manipulations, or the quality of the anæsthetic itself, favour the aspiration of saliva, &c., into the lungs, and that in this way the anæsthetic may become an important contributing cause of lung trouble. I have dealt mainly with ether in speaking of after-effects, because it has, more than any other anæsthetic, been held responsible for them; but, as already mentioned, I attach much more importance to disturbance of respiration during anæsthesia, than to the anæsthetic itself. Two of the four cases which I shall shortly describe to illustrate the clinical characters of massive collapse of the lung occurred after chloroform anæsthesia.

One word here as to the varying incidence in hospital and in private practice. It has been urged that in private the administration of the anæsthetic is nearly always in skilled hands; but that this does not account for the whole of the difference is proved by the observation that the same surgeon, with the same anæsthetist, meets with lung troubles in his hospital cases, but never in private. Chilling of the patient during removal from a heated operating theatre is probably a contributing cause, but its importance is qualified by the fact that its operation is almost entirely limited to abdominal cases. Believing, as I firmly do, that two factors are of paramount importance in determining lung complications—namely, access of infective material to the lung and an abnormal state of the organ resulting from defective respiration—the following differences between the two groups seem to me to be of greater moment: the state of the mouth, the general resistive power of the patient, and the difference in purity between the air of a hospital ward and that of a surgical home or private dwelling.

CONSIDERATION OF STATISTICS.

It is not easy to arrive at any reliable estimate of the frequency of post-operative lung complications. Many of the available statistics have been compiled with a view to determine the frequency of accidents after the use of a particular anæsthetic, and are therefore of little use for our purpose. The results published some years ago by Dr. Crouch and Mr. Corner are, however, of interest. They carefully observed every patient in St. Thomas's Hospital, after ether or chloroform anæsthesia, over a period of 12 months, with the object of ascertaining the relative frequency of after-effects with these two anæsthetics. After excluding every case in which lung complications first declared themselves more than 24 hours after operation, they still found 10 in 2400 etherisations, but not a single one after 600 administrations of chloroform. Of the 10 cases there were 6 of slight bronchitis and 4 of broncho-pneumonia, with 1 death. Of these 4, two followed operations for hernia, one occurred after nephrectomy, and the fourth after Whitehead's operation for hæmorrhoids. The number of cases excluded is, unfortunately, not stated, but we may safely conclude that it was not a negligible one. It is worth noting that the four serious complications all belong to the class of cases I have selected for consideration this evening. Indeed, wherever we turn to statistics of post-operative lung troubles we find the same preponderance after abdominal operations.

In 1906 Bibergeil published an analysis of 3909 laparotomies, or operations involving rough handling of the peritoneum, from Koerte's Berlin Clinic, showing 7·2 per cent. of lung after-effects. There were 815 operations above the umbilicus, with 80 complications, = 9·8 per cent.; 2625 below the umbilicus, with 173 complications, = 6·6 per cent.; and 469 cases in which the abdomen was laid open from ensiform to pubes, with 30 complications, = 6·4 per cent. The incidence of complications was highest after operations on the stomach. The distribution of complications in the various classes of operations is shown on the screen. Bibergeil attaches very little importance to the anæsthetic, but believes aspiration of saliva, &c., and disturbance of respiration to be much more important factors. He mentions inefficient expansion and aeration of the bases, but does not appear to have met with collapse. Judging by the greater frequency of pneumonia after operations on the stomach, as compared with the liver and gall-bladder, he believes that division of the deep abdominal fascia is of more importance than dragging on the diaphragm.

The publication of this paper suggested the desirability of instituting an inquiry on similar lines into the records of a London hospital, and I have to thank my late house physician, Mr. B. Sangster Simmonds, for carrying out a very careful analysis of the records of 3559 laparotomies and renal operations performed at the Middlesex Hospital during the five years 1906–10.

Distribution of Lung Complications in 3559 Abdominal Operations Performed at the Middlesex Hospital during the Five Years 1906–1910.

Site of operation.	No. of cases.	No of complications.	Percentage.
Stomach	253	34	13·4
Liver and gall-bladder	109	13	11·9
Intestines	175	6	3·4
Appendix	805	29	3·6
Kidneys	161	8	4·9
Pelvic organs	924	62	6·7
Hernia	382	32	8·6
Bladder	53	1	1·8
Exploratory operations	167	14	8·3
Miscellaneous	30	2	6·6
Totals	3559	201	5·6

The frequency and fatality of the several complications are as follows:—

Complication.	No. of cases.	No. of deaths.
Pneumonia	88	31
Bronchitis	53	4
Dry pleurisy	26	0
Massive collapse	12	1
Pleural effusion	7	1
Pulmonary embolism or infarct	8	4
Gangrene of lung	2	2
Abscess of lung (?)	1	0
Empyema	4	2
	201	45

The only death in the massive collapse group was due to general sepsis.

Mr. Simmonds considers, from the descriptions given in the notes, that 20 cases recorded as pneumonia were probably examples of massive collapse; this would give us 68 cases of pneumonia and 32 of massive collapse.

The relation of the condition of the wound to the incidence of complications was as follows:—

	No. of cases.	Complications.	Percentage.
Clean	2698	134	4·79
Septic	861	67	7·78

The influence of the site of operation on the frequency of after-effects is shown in the subjoined table:—

	No. of cases.	Complications.	Percentage.
Above umbilicus ...	405	51	12·59
Below umbilicus ...	2993	142	4·74
Operations on kidney	161	8	4·9

The following facts were elicited as to the day of onset of lung complications:—

Day of onset	1st	2nd	3rd	4th	5th	6th	7th	After 7th.
No. of cases ...	46 ...	35 ...	14 ...	16 ...	7 ...	11 ...	8 ...	54

The great majority of the complications developing more than a week after operation were due to pleurisy, septic broncho-pneumonia, empyema, and embolism. There were besides the above ten cases of doubtful date. In most of these the lung lesions were discovered post mortem.

The relation of the anæsthetic to the incidence of lung complications is shown in the following table:—

Anæsthetic.	No. of cases.	No. of complications.	Percentage.
Gas, ether, chloroform ...	2489	129	5·18
Chloroform	452	35	7·74
Gas, ether	475	25	5·26
Chloroform, ether	133	3	2·25
Ether	2	1	—
Doubtful	8	8	—

The relation of the various complications to the anæsthetic employed was as follows:—

Complication.	No.	G.E.C.	C.	G.E.	C.E.	E.	Doubtful.
Pneumonia	88 ...	54 ...	15 ...	14 ...	1 ...	1 ...	3
Massive collapse...	12 ...	8 ...	1 ...	2 ...	1 ...	— ...	—
Bronchitis	53 ...	32 ...	14 ...	4 ...	1 ...	— ...	2
Pleurisy	26 ...	22 ...	1 ...	3 ...	— ...	— ...	—
Pl. effusion	7 ...	5 ...	— ...	— ...	— ...	— ...	2
Embolism	8 ...	5 ...	2 ...	1 ...	— ...	— ...	—
Empyema..... ...	4 ...	2 ...	1 ...	1 ...	— ...	— ...	—
Gangrene of lung	2 ...	1 ...	1 ...	— ...	— ...	— ...	—
? Abscess	1 ...	— ...	— ...	— ...	— ...	— ...	1

Without attempting to analyse these figures, I think we may safely draw the following conclusions as to post-operative lung complications:—1. They occur with especial frequency after operations above the umbilicus. 2. They are more likely to arise in septic cases, but are frequently associated with clean wounds. 3. They usually develop within two days after operation, and are relatively uncommon after the fourth day. 4. Complications arising after the first week are generally associated with septic processes. 5. Most of the deaths occur in septic cases. 6. The facts presented do not support the opinion that after-effects more frequently follow ether than chloroform anæsthesia.

MASSIVE COLLAPSE.

I should like now to draw your attention to the group of cases of massive collapse. I am convinced that collapse of the lung plays an important part in the causation of post-operative complications. Deflation of the lung, from whatever cause, predisposes it to inflammation, and it is generally admitted that abdominal section, especially above the umbilicus, seriously interferes for several days with efficient expansion and aeration of the bases. "This is in part due to instinctive dread of pain and in part to protective reflex inhibition, and the tendency to inflammation is further aggravated by the difficulty of effectually clearing the lung of offending matter by coughing." (Bibergeil.) But there is more than this. In some cases inhibition is carried to such a pitch that the affected lung becomes totally deprived of air, and further this reflex lobar collapse may arise in connexion with operations at a distance from the diaphragm, as, for example, in operation for the radical cure of hernia, in operations on the rectum, on the pelvic organs, &c. This state of massive collapse is accompanied by a definite train of symptoms and physical signs, but before describing these it is desirable that I should restate, very briefly, the nature of the evidence which justifies the conclusion that this condition, occasionally met with after abdominal operations, is due to reflex arrest of diaphragmatic movement.

Stated in very general terms, it may be said that immediately after birth the transition of the lung from the fœtal state of atelectasis to that of full expansion is brought about by the establishment of the muscular movements of respiration, and that the maintenance of lung expansion is the result of a balance struck between the forces which respectively tend to cause expansion and contraction. Whenever, from any cause, a bronchus becomes occluded the portion of lung beyond it becomes gradually emptied of air. This collapse is generally attributed to passive absorption of the contained air. But if we examine the lungs from a subject in whom the diaphragm had been completely paralysed before death there will most probably be complete uniform collapse of one or both lower lobes. The deflation is so complete that the affected lobe usually sinks entire in water, and compression under water fails to cause the escape of any air-bubbles. This massive collapse takes place in the absence of bronchial obstruction or of any of the recognised causes of deflation of the lung. That this is not an accidental association is proved by its presence in every one of five fatal cases of diphtheritic paralysis of the diaphragm which I had the opportunity of examining both in the wards and post-mortem room. The relationship is further strengthened by the absence of massive collapse in three other cases of the same disease, with respiratory complications, for in one of them there had been no signs of diaphragmatic paralysis, in the second the signs had been very indefinite, and in the third the diaphragm had recovered its function during the last 24 hours of life.

It is now, I believe, generally accepted that the diaphragm is the direct expander of the lower lobes, and the cases just mentioned strongly support the view that paralysis of the expanding muscle is followed by collapse of the affected lobe. The cause of the collapse is capable of a very simple explanation. Whenever, whether as a result of paralysis or of temporary inhibition of muscular action, the distending force acting on any part of the lungs becomes less than that of the agencies which tend to cause it to contract, these latter, so to speak, take charge, with the result that the affected part of the lung rapidly empties itself of its contained air. In other words, the lung which is deprived of its expanding force tends to resume the fœtal condition.

A moment's consideration will show that this kind of collapse differs fundamentally from patchy or lobular collapse in being essentially the result of an active process. For this reason the term active lobar collapse is perhaps preferable to massive collapse which I used when I first described the condition.

Soon after I began to take an interest in post-operative lung troubles a few years ago it occurred to me that massive collapse from reflex inhibition of the diaphragm might account for some of the perplexing lung conditions occasionally met with after abdominal section. In the hope of obtaining support for this idea I examined four clean straightforward appendix cases under X rays on the fourth day after operation. In three of them the result was negative, the diaphragm was acting quite normally; but in the fourth case there was no movement at all during quiet breathing and a barely perceptible excursion of 2 mm. when the patient was made to draw a deep inspiration. This man was a little slow in getting over the operation, but otherwise presented no unfavourable symptoms. Here, at any rate, we have proof of reflex inhibition of the diaphragm after abdominal section. In pericarditis, where the conditions are also favourable, I have seen reflex arrest of the diaphragm three or four times under X rays, and it is interesting to note that massive collapse of the left base has been met with more than once post mortem in cases of this disease.

The next piece of evidence was the occurrence of lobar collapse of the bases in a fatal case of general sepsis after laparotomy, in which all other known causes of collapse could be excluded. The importance of this case lay in the fact that it disclosed, for the first time, in association with an abdominal operation, a pathological state of the lungs

which had previously only been met with as the result of paralysis of the diaphragm. Soon after this the same lung condition was found post mortem in association with intense dry inflammation of the pleura covering the lower lobe; once in a case of portal pyæmia with multiple abscesses in the liver, and twice in connexion with acute apical pneumonia on the same side. Yet another case was met with, this time with a healthy pleura, in a fatal unoperated case of hour-glass contraction of the stomach, accompanied by agonising gastralgia.

The cases just quoted show that massive collapse may result either from paralysis of the diaphragm or in consequence of the presence of acute inflammation or acute pain in the immediate neighbourhood of the diaphragm. In the first case the facts adduced place it beyond doubt that the collapse is the direct result of paralysis, whilst in the second the inference is almost as strong that it is brought about by reflex inhibition. It is true that many of the cases just mentioned were accompanied by intense pleural inflammation, and it may well be that this, rather than the operation itself, led to reflex inhibition. I am not prepared to maintain the contrary, but there is another group of cases—comprising all but one of the 12 tabulated above—in which a train of symptoms was observed which, as I shall show you, can only be accounted for by massive collapse of the lower lobe. These all occurred in patients with clean, or practically clean, abdominal wounds, and all terminated by recovery. Reflex inhibition is the only conceivable way in which arrest of diaphragmatic movement can have been caused in these cases, and if we accept this explanation we must admit that operations in any part of the abdominal cavity, or on the kidneys, may determine this accident, irrespective of sepsis.

Clinically this type of massive collapse is of very great interest. It may closely simulate pneumonia, for which it has undoubtedly often been mistaken. Sometimes it develops with such dramatic suddenness and intensity as to suggest pulmonary embolism. On the other hand, it may give rise to so few symptoms that, unless looked for, it may be missed altogether. It does not appear seriously to endanger life as a rule, but there is some ground for believing that it may occasionally prove rapidly fatal.

The conclusive sign of massive collapse is displacement of the heart's apex beat towards the affected side, and it is the only sign peculiar to the condition. It is always present when collapse is unilateral and sufficient in degree, but is probably absent in the rare cases in which both lower lobes are involved simultaneously. We have no means of estimating the amount of deflation which takes place in a given case. It probably varies with the degree and duration of inhibition of the diaphragm, and the term massive collapse is only applicable to those cases in which it gives rise to definite physical signs. It is probable that the amount of displacement of the apex beat is a rough index of the amount of deflation which has taken place.

The mechanism of the cardiac displacement is not difficult to understand. When the affected lobe begins to contract, the contiguous costal and diaphragmatic surfaces fall in behind it as far as anatomical relations will permit. Beyond this point the occurrence of negative pressure can only be prevented by the displacement of the mediastinum towards the affected side and complementary enlargement of the healthy lung which always takes place. In this connexion it is of interest to note that in a case of plastic bronchitis, recorded by Samuel West, an extensive collapse of the left lung, consequent on the occlusion of the main bronchus by a cast, was accompanied by marked displacement of the heart and mediastinum towards the affected side. In well-marked cases of massive collapse it is not uncommon for the whole of the affected lung to be temporarily thrown out of action, the signs of collapse extending from the base to the apex, with diminishing intensity. This is quite in accord with what we know of the action of the diaphragm on the upper lobes.

In uncomplicated cases the symptoms tend to subside rapidly. The initial dyspnœa rarely lasts more than a few hours, and by the end of the first 24 hours all urgent symptoms have usually cleared up. The displaced heart has already begun to move back towards its normal position, though this may not be fully regained for several days. It must be borne in mind, however, that collapsed lung is very liable to become inflamed, and where infective material is at hand the clinical picture of massive collapse may insensibly become replaced by that of broncho-pneumonia. It is at present impossible to say what proportion of cases of post-operative pneumonia begin as massive collapse. No reliable data can be available on this point, unless the exact position of the apex beat and the condition of the bases are carefully noted before every abdominal operation and carefully observed for several days after operation.

I might mention here that in right-sided cases there are other factors which may contribute to make the dislocation of the heart appear greater than it really is. I refer more particularly to the masking of the cardiac dulness by the complementary enlargement of the left lung, and in acute cases the probable dilatation of the right cavities owing to the sudden disturbance of the pulmonary circulation.

CASE OF ACUTE MASSIVE COLLAPSE.

I propose, with your permission, to conclude my address by describing very briefly two or three illustrative cases of massive collapse. The first case, which has already been placed on record, is such a striking example of the acute variety of massive collapse that I hope you will forgive me for quoting it again.

CASE 1.—A healthy man, aged 23 years, underwent an operation for the radical cure of a left inguinal hernia on Nov. 9th, 1909. The case was perfectly aseptic throughout. Anæsthetic: gas, ether, and chloroform; no trouble during administration. Twenty-four hours after operation, without warning of any kind, the patient was suddenly seized with pain across the lower part of the chest and severe dyspnœa. When I saw him, within three hours of the onset, there were alarming dyspnœa with dusky anxious face and strong movement of the alæ nasi. The aspect suggested pulmonary embolism. On examination the whole of the left front and axilla were hyper-resonant and the heart dulness obliterated (suggesting pneumothorax). The heart beat was in the fourth right interspace, close to the sternal border. Traube's space was resonant and the stomach resonance normal. There was loud exaggerated breathing all over the left front and axilla, without adventitious sounds. The heart's action was regular, 132 per minute. On the right side resonance was about normal in the first space, but below this there was increasing dulness right down to the base. Breathing was weak all over the right front and quite inaudible at the base. Vocal fremitus was much diminished. There was very little movement of the right chest. The liver was slightly raised. Epigastric movement was normal. The temperature rose rapidly to 103°F. with the onset of symptoms. Next morning (12 hours later) the patient was much better. There was only slight dyspnœa, and cyanosis had almost disappeared; the temperature was 99° and the pulse was 84. The heart dulness had not reappeared on the left of the sternum. On the third day the heart impulse was felt just to the left of the sternum. The patient was now free from symptoms, but the heart did not regain its normal position for a fortnight.

You will observe that the outstanding features are silence of the affected lung, overaction of the healthy lung, and displacement of the apex beat towards the affected side. The occurrence of massive collapse on the side of the chest opposite to the operation is probably quite exceptional; I have not as yet met with it in any other case. In an already published case, after left salpingectomy, the left lung was collapsed, the apex beat moving out into the left axilla. The general resemblance of the symptoms of acute massive collapse to those of pulmonary embolism or pneumothorax is not surprising, seeing that in each of them a large area of lung is suddenly thrown out of action.

MASSIVE COLLAPSE SIMULATING PNEUMONIA.

The next case is a good example of massive collapse simulating pneumonia.

CASE 2.—The patient, a slightly built delicate-looking woman, was admitted for uterine fibroids. She had suffered for the last six months from cough and difficulty in breathing, diagnosed as asthma. On admission the apex beat could not be located, but the superficial heart dulness was normal. There were some sibilant rhonchi over both backs, but no trouble at the bases. Subtotal hysterectomy was performed on Feb. 15th, 1911. The anæsthetic, chloroform, was well taken. On the following day she was comfortable and free from lung symptoms. Early on the 17th she had an attack of pain in the right chest and her breathing became short and increased in frequency. On examination there was dulness, with tubular breathing, all over the right lower lobe, and almost total loss of vocal fremitus. The percussion note was also impaired over the middle and upper lobes; breathing was weak all over the right lung, and the right chest moved very imperfectly. The girth at the level of the fourth rib was 12·2 in. on the right side, as against 13·5 in. on the left. The heart's impulse was in the fourth right interspace, 1 in. from the sternum, and the heart sounds were clearly audible over the middle lobe and in the right axilla, but only feebly heard to the left of the sternum. The temperature rose to 102·6°F. during the day, and there was slight irregular pyrexia for the next five days. The pulse-rate rose suddenly to 120 at the onset and remained above that level for three or four days, the respirations ranging between 26 and 32 during the same period. Rhonchi were heard over both backs throughout, but no crepitations were detected at any time. The patient began to expectorate viscid greyish-green sputum within 24 hours of the onset. This yielded cultures of pneumococcus and streptococcus. The apex beat returned to the normal position during the third day. Tubular breathing gradually disappeared as the breath sounds at the right base gained strength, but a difference was perceptible on the two sides for about 10 days.

It would have been easy, by means of a few judicious omissions, to make the account of this case read very like a mild attack of post-operative pneumonia at the right base, and it would be equally easy, as the result of a too superficial examination, unintentionally to make a similar mistake in diagnosis. It is not material whether this patient subsequently had broncho-pneumonia or not, but it is certain that the initial lesion was massive collapse of the right base. This case illustrates, besides heart displacement, two other common features of massive collapse—namely, loss of function in the adjacent lobe and diminution in girth of the affected side of the chest. I do not wish to imply that they are peculiar to the condition; their association with acute inflammations of the lungs and pleuræ is well known; but they should suggest the probability of massive collapse where they are out of proportion to the other lung symptoms, especially when associated with dyspnœa rather than toxæmia.

The early occurrence of viscid expectoration in most cases deserves notice. The sputum at first probably consists of the contents of the collapsing lobe which are pressed back into the large bronchi and coughed up. But if expectoration continues for more than 24 hours it probably indicates the supervention of bronchitis or broncho-pneumonia in the re-expanding lobe or in some other part of the lungs. Pain is also a very common early symptom. It is apparently not of the same kind as pain of pleural origin, being as a rule more deep-seated and less acute in character.

MASSIVE COLLAPSE WITHOUT SPECIAL SYMPTOMS.

The next case shows that massive collapse may occur without special symptoms.

CASE 3.—A girl, aged 18 years, was admitted with acute abdominal symptoms on Nov. 8th. An exploratory laparotomy was performed the same afternoon under chloroform. The whole of the jejunum and ileum were found to be in a state of acute inflammation, with blood-stained fluid in the peritoneal cavity. Next day she was better, except for a troublesome cough. There were medium-sized râles all over the right lung, especially over the middle and lower lobes. On the 10th she was better and the cough much less troublesome. On the 11th the cough was almost continuous. Temperature 101°, pulse 104, respirations 24. The apex beat, which was normally situated before operation, was now in the fifth space, 1½ in. to the left of the median line, and the deep cardiac dulness extended 1½ in. to the right of the sternum. The left chest was normal, but there was complete silence on the right side except at the extreme apex, without adventitious sounds or expectoration. On the 12th the patient was better, but coughing up viscid greenish sputum. Resonance was impaired at the right apex, and below the fourth rib level dulness was practically absolute. The breath sounds over the right front were almost amphoric and high pitched and tubular over the base behind, with numerous fine râles. From this date the lung condition steadily improved and was normal again on Nov. 29th. There was irregular slight pyrexia for a few days, probably in part due to trouble with the stitches. The apex beat gradually regained its normal position. I examined the chest carefully on Nov. 14th. There was still weak tubular breathing at the right base, with fine râles after cough. I made a note to the effect that the physical signs did not suggest pneumonia. The respiration-rate had never exceeded 24, and there was no pain or dyspnœa at the time of the onset of symptoms.

The last case of my own I shall mention affords a striking illustration of the onset of massive collapse without a single symptom of lung trouble. But for the routine examination of the chest, which is carried out before and after operation in every abdominal case, it would probably have been missed altogether.

CASE 4.—A healthy boy, aged 12 years, had two acute attacks of appendicitis within a month. The appendix was removed at the close of the second attack. Before operation the heart was normal, but there was weak breathing at the right base, with slightly impaired percussion. Anæsthesia was induced with gas and ether (on Wednesday afternoon). There was over-secretion within two or three minutes, and chloroform was substituted. The appendix was large and thick, and adherent to the abdominal wall, but there was no suppuration. The boy was very little upset by the operation, and was remarkably well and cheerful on Thursday morning. The temperature rose to 100° that evening, but was normal again on Friday morning, when the house surgeon discovered signs of collapse at the right base. I examined the chest the same afternoon. The patient was quite happy and did not exhibit the slightest sign of discomfort. The right chest was hardly moving at all, the left was over-acting. The superficial cardiac dulness was almost entirely obliterated. The apex beat was invisible, but could be felt at the right border of the sternum, opposite the third and fourth rib cartilages, where the heart sounds were most loudly heard. The percussion note was a trifle flat over the right upper lobe, becoming gradually more impaired towards the base which was dull. Breathing was very weak all over the right chest, and distinctly tubular over the lower lobe behind. No râles were heard. On the left side the breath sounds were exaggerated. Beyond a very occasional short cough there was absolutely nothing to suggest lung trouble. On the following day the boy was as well as ever. The apex beat could now be felt indistinctly close to the left sternal border, otherwise the physical signs were unchanged. Two days later the chest was practically normal again.

The great variation in the mode of onset is one of the most interesting features of massive collapse. In one patient it simulates pulmonary embolism, in another it gives rise to no symptoms at all. The difference cannot be explained by the degree of collapse, for in both cases the physical signs indicate a profound alteration in the condition of the lung. It is more likely to be dependent on the rate at which collapse takes place and on the ability of the heart and the sound lung to adapt themselves easily to the altered condition of respiration and circulation.

FATAL CASES.

These cases will enable you to form some idea of the clinical features of massive collapse. The complication usually declares itself within three days of the operation. I have met with it twice on the fourth day, but never later. The recovery of every clean surgical case in which it has been diagnosed would appear to justify the assertion that though sometimes very alarming it is not dangerous to life, but the cases recorded by Dr. Hewitt and Dr. Low, to which I must now refer, suggest that there may be exceptions.

The operation performed on Dr. Low's patient was gastrostomy. There was considerable difficulty in getting the stomach forward. The patient took the anæsthetic exceedingly well, and left the table in a much better condition than usual after an operation of that kind. About three hours later he began to get blue, and the resident physician was sent for. He found both bases quite dull. The patient died the same night. At the post-mortem examination the major part of both lobes (presumably the lower) was absolutely airless.

Dr. Hewitt's patient was not examined post mortem, but the excellent account of the symptoms convinces me that it was a case of massive collapse. A boy, aged 14 years, was operated on for appendicitis. He was in fair health, the heart sounds were good, and there was no cough or breathing difficulty or abdominal distension on the day of operation. Ether was given for 45 minutes. The induction was smooth and without difficulty of any kind. I now quote verbatim from Dr. Hewitt's account of the case:—

> When the patient was fully under ether I noticed a great peculiarity in his breathing. The abdomen, instead of rising with inspiration, as is usual, receded, and respiration was wholly thoracic, although a plentiful supply of air was allowed. Slight cyanosis persisted throughout. No other abnormality noticed. No abnormal secretion of mucus. Later in the day it was noticed that more mucus than usual seemed to be present in the air-passages, that the respiration was 32 per minute, and that the pulse was 112. The breathing did not improve during the night. Patient slept fairly well, but complained of pain at the base of the left lung anteriorly. At 8 A.M. next day: pulse 160, respirations 40; a good deal of rattling in the chest. At 12 noon the breath sounds were harsh with râles and rhonchi all over the chest, except at the base of the left lung anteriorly, which was dull on percussion. The heart sounds were almost indistinguishable. There was no increase of vocal resonance. The apex beat of the heart was not displaced. There was no sign of fluid or definite pneumonia. ..... At 4 P.M. the respiration was 81, the pulse 150, and the temperature 102°F. At 10 P.M. the patient grew very dusky and was bled, but only 1½ oz. of blood issued. No tubular breathing was audible, but both bases posteriorly were dull and the breath sounds were deficient. ..... The patient died 34 hours after operation.

Dr. Hewitt remarks that it is in the highest degree probable that the complete absence of diaphragmatic breathing led to fatal basic engorgement of the lungs.

CONCLUSION.

Mr. President, the hour warns me that I must bring my remarks to a close. I have endeavoured to prove that deflation of the pulmonary bases, resulting from reflex inhibition of diaphragmatic movement, is an essential, if not the chief, factor in the causation of post-operative pneumonia, and that the rôle of the anæsthetic is only a very secondary one. I have placed before you figures which prove that these after-effects are far from rare, and that in the present confused state of our knowledge concerning them mistaken diagnoses are probably of frequent occurrence. If we are ever to clear up the complex nature of these accidents and to arrive at a more reasonable classification of post-operative lesions it is absolutely necessary that the lungs should be carefully examined by a competent observer, and the exact position of the heart beat noted before every abdominal operation. In this way alone will it be possible to appreciate the slight changes in the breath sounds, in the respiratory movements of the chest, or in the position of the apex beat, which indicate the onset of trouble, and often give a sure indication of its nature. I am convinced that a good deal can be done in the way of preventing or alleviating many of these troubles, but before this can be achieved with

any hope of success the present slipshod diagnosis of after-effects must be replaced by something more accurate.

Gentlemen, if you come to think of it, abdominal section is a hit below the belt. The patient is always winded by it more or less, and that is the real reason why abdominal operations are so often followed by lung trouble.

A Lecture
ON
MENTAL DISORDERS AND SUICIDE.

Delivered at the Medical Graduates' College and Polyclinic on May 9th, 1911,

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GENTLEMEN,—I recognise that most of you attend the post-graduate lectures for what may be called practical reasons. You have passed through the schools of medicine and you have heard the theories and the principles of medicine, and now after some years of personal experience you want to hear more of the experience of those who have had special opportunities of watching certain types of disease. I feel that the subject of "suicide and mental disorder" is one which has a very powerful influence on the success of a medical man. I have known of serious disaster—even ruin—following the suicide of an influential patient. I shall endeavour to point out the special dangers which arise in cases of mental disorder.

I suppose it is well to say at starting that suicide alone is not evidence that a person was suffering from any recognised form of mental disorder. I need only refer to the fact that suicide has been at various times and in other countries considered as obligatory or even virtuous. I have met with instances in which men have considered the whole matter in a cool, deliberate way, and have decided that of two evils their suicide was the less. I remember well the case of a man who, having invested the greater part of his capital in a business of which he knew little or nothing, feared that he might have involved his family in ruin. In his agreement he had caused a clause to be inserted that if either partner died within a short period of the foundation of the company his capital should be returned. He consulted a lawyer, asking whether if one of his partners committed suicide the capital would still have to be returned. The answer being in the affirmative, he bought a revolver and shot himself. Fortunately, he recovered and in the end felt that he had been rash, as the business was doing well. Yet he had certainly not acted on insane, though unreasonable, grounds. Suffice it to say that the kindly finding of many juries in very many cases is not borne out in my experience. Unreasonable, not insane, might be the truer verdict.

I shall draw on my own experience and shall not hesitate to point out errors of judgment which have led to disaster. There are just a few axioms with which I shall begin. First, remember that every patient suffering from mental depression is a potential suicide, yet also recognise that some patients are much more dangerous than others. Next, recognise that the promise of a melancholic patient is not to be trusted, and also do not forget that the working of the insane mind is not to be judged by that of the normal one. It is well to recognise that most suicidal patients have their own special tendency—that is, they have a preference for one form of suicide rather than another.

Though suicide associated with mental disorder is most common in those suffering from mental depression, yet it occurs in other forms of insanity. Suicide occurring in mania or in general paralysis of the insane may be called accidental. The buoyant maniac may do wild or extravagant things; he may feel that he can do things which would be wild in others because of his special powers. I have known such who would freely have swallowed drugs or drink to a poisonous degree, and the general paralytic will gladly show his power of flight by jumping from a window or from a cliff. There are other conditions of mental disorder in which self-destruction occurs which are not due to melancholia, and to these I shall refer later. It is well to divide the cases of suicide occurring in mental disorder into groups: First, those depending on impulse; and secondly, those following design.

IMPULSIVE SUICIDE.

I fancy few or none of you have not felt from time to time utterly unreasonable impulses. The commonest form of this is the tendency to throw oneself from a height or to hurl oneself in front of a train. I have never been able to explain the origin of this altogether destructive feeling. It is present markedly in the neurotic and in others who from age or illness have been reduced below their normal level of self-control. There are, however, special dangers in some forms of mental disorders allied to this feeling. The neurotic, especially those with marked hereditary neurosis, are very subject to impulses in adult life, just as they are to emotional storms or "rages" in their childhood. They react unduly to their surrounding, exhibiting exaggeration of mental reflexes. Though one generally looks upon the truly hysterical as not dangerous to themselves, yet some such do kill themselves under some sudden idea, and every year I meet with instances of attempts at suicide in such cases. The taking of poison is one of the most common means adopted. In some cases the act is for the moment with the intention of self-destruction; often this is as rapidly repented from, and then confession and remedies follow with good results. In epilepsy there are two special dangers: one due to the violent emotional disorders common in epileptic attacks, the other resulting from hallucinations, generally those of hearing.

A considerable number of cases of suicide yearly depend on insane impulses due to acute alcoholism. It is enough to point out the number of attempts at suicide which occur in prison cells while drunken persons have been detained for the night. Every year I am consulted about patients who dread losing their self-control and committing suicide or homicide, generally infanticide. In my experience, though these patients suffer greatly from the dread of doing a criminal act, I have yet to meet with one of my patients who has committed the feared act. It is like the hysterical woman who says she must smash something, but given the chance she does nothing. It is wise doubtless in these cases of dread of loss of self-control to remove the danger, at least to exercise some guardianship, but not to make too much of the matter. Judicious neglect, in appearance at least, is valuable.

The question of hereditary tendency to suicide is often spoken of, and I have had a good many examples brought to my notice. No doubt in these cases there are several factors which have to be considered. First, there is undoubtedly neurotic instability tending to defective control and emotional display. Next, the effect of suggestion is very great; I know no idea which seems to be more readily transmitted by suggestion than suicide. I have frequently been consulted by patients who have fully recognised the danger and have said, "I am constantly in dread of doing what my father or my brother did." In some cases the neurotic tendency to melancholia which is so common leads always in the same suicidal direction. Therefore, in passing, I would emphasise the fact that there is danger in all cases of melancholia, but greater danger when there has been a suicide in the family or in the neighbourhood.

SPECIAL METHODS OF SUICIDE.

Though one meets with patients who might be called general suicides, yet fortunately, as a rule, most of such patients are special in their methods. The method varies greatly with the sex and position of the patient. I have elsewhere referred to the case of a man who swam across a canal so as to throw himself in front of a train, and of a young man who carefully avoided danger till he could get a pistol. The professional habit acts in two ways; in one a lethal instrument may not appeal to the patient in that way. Thus, I remember removing compasses and similar instruments from a melancholic architect, who on recovery told me that this act of mine was the cause of the first notion in his mind that such instruments might be the means to his end. On the other hand, there is no doubt that anyone having to deal with drugs is likely if suicidal to make use of them. I look upon precipitation, the tendency to throw themselves from the windows, as specially attractive to women, while shooting and cutting their throats appeal to men. The practical point is not to treat suicidal, or in fact melancholic, patients on any but the ground floor, and I find the present fashion of treating many such out of doors is good and safe.

It is impossible to describe all the dangers which may arise, and all the ingenious methods which have been followed by such patients. I remember one patient in Bethlem who tore a strip off the hem of his night-shirt, which he wound round his throat, while with the other end attached to his foot he exercised constriction. I remember one very intelligent man saying that though there was only one way into the world the ways out were innumerable, and he was confident that anyone determined to kill himself would in the end succeed. Recently in a private asylum a man who had already tried several methods attempted to get tetanus by breaking his eyeglass, scraping a raw place on his arm, and rubbing in earth, as he had read about the tetanic micro-organism being present in some earth. It is fortunate that such ingenuity is not common.

I find it convenient in studying the forms of mental disorder associated with suicide to divide them into the impulsive, which I have already referred to; then to the deliberate, and these latter I subdivide into those whose acts follow morbid egotistical feelings and those in whom the act depends on altruistic feelings; and, lastly, those in which the suicidal tendency arises from some outside influence, such as an illusion or a hallucination.

SUICIDE DUE TO MORBID EGOTISM.

Now to consider each of these more in detail. In highly strung neurotics there is a class, allied in many ways with the impulsive, who are intolerant of suffering, whether the pain is physical or moral. Of the patients admitted into asylums with suicidal tendencies a considerable number are said to have broken down through sleeplessness, worry (domestic or personal), or ruin. In these cases if suicide had taken place the usual verdict would have been justified. It is, however, of interest to recognise that in periods of very real and general distress—as in times of war or pestilence—there is rather a reduction than an increase of sufferers from mental depression. I have known patients suffering from neuralgia and from the pains of locomotor ataxia take poison to end their sufferings, and I can hardly consider that their acts were so unreasonable as to be considered insane. And now for the consideration of patients who are suicidal as a result of disordered feeling of self.

The ordinary hypochondriacal melancholic is, as a rule, so fully occupied with his miseries that he rarely contemplates ending them. I have never yet met with what I have called a brain hypochondriac (that is, one whose whole attention was spent on head feelings) commit suicide, though they often say that life is intolerable. The patient who has gastro-intestinal hypochondriasis is rather more dangerous, directly and indirectly. I have known such a one get a carving knife and perforate his abdominal walls or divide a vessel to bleed himself to death. I shall never forget being called to see a French governess who, with ideas of bowel obstruction, had obtained a knife and made a series of incisions in her abdominal wall, going right through the peritoneum. The cuts were numerous and deep and the patient died. I have known a general paralytic who believed that his abdomen contained millions of gallons of useful manure, and was quite willing benevolently to open his treasure house for the general good. It is well to remember that loss of common sensibility, which may be present in such cases, leads to injuries which cause death which was not intended. Indirectly these patients may kill themselves by starvation or by swallowing foreign bodies. Thus I have known a set of false teeth swallowed with intent.

SEXUAL AND RELIGIOUS IDEAS.

In hypochondriacal patients with sexual ideas I think there is the greatest danger. The young man with so-called spermatorrhœa, a victim to masturbation, is a dangerous patient. Quack literature has a great deal to answer for in this. The dread of impotence is the dominating idea. There is associated with this a dangerous group which is not infrequently represented by persons who commit suicide on the eve of their wedding. In them often a feeling of impotence exists, or the æsthetic love appearing to take the place of the erotic feeling leaves the man terribly depressed. Later in life there may appear similar symptoms, and certainly in some cases in my experience men suffering from age or locomotor ataxia marrying in haste repent at leisure with suicidal tendencies. Allied to this is syphilophobia and dread of passing on the disease, but I shall speak of this under delusions later. Among women the suicidal impulses depend more commonly on altruistic feelings, but I see a number in whom amenorrhœa gives rise to feelings of unnaturalness and unfitness or unworthiness, and such women not infrequently drown themselves. At the menopause the altered sexual feelings may give rise to overpowering desires which so affect the mind of the refined and educated woman that she believes she has been all her life a fraud or, as in one remarkably high-minded and religious woman, the erotic eruption at the menopause suggested to her mind that she was pregnant by the devil.

There is a general idea that those suffering from so-called religious mania are very suicidal. First, I find it hard to define religious mania, for the religious element is only the interpretation which certain people give to their depressed feelings. I think that by the term it is generally understood those who believe themselves to have sinned against the Holy Ghost, who are, in fact, unpardonable sinners. Doubtless some such kill themselves, but in talking with many I have generally found that they were in no way anxious to seek the Hell they imagined prepared for them. This dread of Hell, however, must not be taken as a certain deterrent to suicide. Religious depression as a cause of danger is more potent in women than in men; in men the dread of shame or poverty is much more influential.

Whatever one may say about religious melancholia, I have no doubt about the gravity of depression with symptoms of senility. I think the man with the delusion that he is ruined, that he and his family will be thrown on the parish, is both dangerous to himself and to his relations. Old men thus suffering are sly and cunning, and will take great precautions in preparing for the act. They, too, are not so particular as to the method, and I have known such prepare in several ways so that if the poison did not act drowning would. I can hardly speak too strongly about the danger of these cases, and it is only necessary to look through the coroners' inquests for a few days to find examples. Yet these cases are among the most difficult to deal with, for in many cases, apart from the idea, which may or may not be a delusion, that he is ruined, there is little or nothing warranting the medical man to take definite steps, and I can assure you that if you take steps prematurely the patient and his friends never forgive you for suggesting that there was danger, and at the same time they are only too ready to blame you if any accident occurs.

SUICIDE FOLLOWING BODILY DISEASE.

All melancholia is associated with some bodily ailment, but there are some bodily illnesses which are more particularly depressing. Gastric trouble and bowel trouble tend to depression, and, as I have already pointed out, any disorder of the reproductive functions in either sex is a very powerful depressant. There are certain acute diseases, too, which are not infrequent causes of melancholia. We do not often hear now of suppressed diseases, but I still consider the term suppressed gout represents something which no other words connote so clearly. I shall never forget several cases in which men subject to recurring attacks of acute gout have from some unknown cause (not, I may say, any change in their habits) become very depressed and suicidal. In some there has been a general feeling that they were in some terrible plight and that death was the only way to escape from disgrace. One man, I remember, who had tried almost every possible way of killing himself. He could not be left for a moment without his attempting something. Such a state of active suicidal melancholia lasted for some weeks, when suddenly gout appeared in his great toe, and all the depression had passed off. The question which I could not answer was how to prevent his having suppressed gout again, for, as I say, he had not changed his mode of living before he broke down, and I could only advise him to continue to live in the way he found himself best. I have seen similar cases in which rigid vegetarian diet seemed, however, to be of service.

Next, as to bodily diseases and mental depression, I think that influenza has been the most powerful cause of mental disorder during the last 20 years. In the greater number of post-influenzal cases sleeplessness with depression have been the earliest and most marked conditions. Some years since I did my best to collect the number of suicides following epidemics of influenza; but though I satisfied myself that there was a direct connexion between the influenzal epidemic and the number of suicides, I could not establish this fact by any real trustworthy statistics. I approached it

from the other point, and I satisfied myself that after such epidemics there was a large increase of insanity, and many patients had to be sent to an asylum after an influenzal outbreak. When I was at Bethlem I found a distinct relationship between the admission of melancholic patients and influenza. There is no particular set of mental symptoms, such as any special delusion, associated with influenza. The delusions follow the more ordinary type, which are influenced by the sex, age, or occupation of the sufferer.

ALTRUISTIC SUICIDE.

Now I wish to refer to the melancholic symptoms which I have called altruistic, and this group will be seen to merge with the next, in which hallucinations play an important part.

A neurotic person, generally a woman, being sleepless and having some cause of bodily illness, becomes over-conscientious, and then feels that she has been a careless wife or mother, feels that her sisters have not been her constant care, that some favourite brother has gone to the bad through some defect in her; she feels that she is injurious to others or has been. I have pointed out that such feelings of unworthiness are commonly connected with menstrual irregularity, and this is marked often not only by the idea that the woman has injured or neglected others, but that she has some bodily ailment which is likely to affect others. I have often pointed out the close connexion which exists between the sexual functions and those of smell and touch, and it has been my experience to meet with women who have wished to kill themselves because they felt they had some bad odour about them, which made others shun them, or be afraid of them. Women are very intensely sensitive to any bodily affection which may render them offensive or even objectionable. One patient of mine ran away from an asylum with suicidal ideas, wishing to kill herself, because she felt that the growth of hair on her face must make her repellent to husband and children.

A rather rare source of danger may arise from a feeling that, instead of being really injurious to others, one is in the way, that things would be better if one were dead. Insane jealousy may act in this way. I have known a woman attempt suicide because she felt that her husband's love for her was dead, and that he whom she loved so well might enjoy a fresh love if she were dead. Nearly allied to such cases are those where the idea that direct benefit may follow the removal of the person. I have met with a few in whom there seemed to be a martyr's ecstasy rather than true melancholia, leading the patient to long for death for the good of someone else.

THE RÔLE OF HALLUCINATIONS.

The last section, to which I now refer, is perhaps the most difficult to handle. I refer to suicidal attempts due to hallucinations. These may be direct, such as I call imperative voices, or they may be indicative or suggestive voices. In the former it is almost impossible to be quite certain as to the amount of danger which may be associated with hallucinations of hearing. It has been, and I fancy still is, a very strong belief that every person who has auditory hallucinations is a dangerous lunatic. This is not always true. I have known a good many persons subject to such hallucinations who still were able to live at large. I shall never forget talking to such a one in an asylum. He asked me whether I had fancies or thoughts which I did not act upon. On saying that certainly I had, he said, "Then the only difference between you and me is that you have such fancies and I *hear* them. We neither of us act upon these suggestions."

Comparatively few persons commit suicide because they are told to; many more do because they cannot bear the annoyance of what may be called persecution voices. To some these hallucinations seem to take the place of a conscience, bringing before the patient's mind every evil thought he has ever had. To women such suggestions are very trying. I recall a young officer who had been in African campaigns and who heard suggestions of cowardice brought against him by the voice. He said if this continued he should certainly kill himself. There is special danger, in fact, I hardly know any more dangerous patient than one who heard the threatening of many people, such as a crowd, who he feels are coming to lynch him. I have known suicidal leaps from great heights due to such feeling. In one case the patient thought he heard the leaders of the crowd say that he had syphilis, which he was sowing broadcast in the city, and leaped from a window. Other hallucinations or illusions are hardly to be recognised as special sources of danger. Some definite fixed delusion may, however, have grown out of some earlier mental disorder, and may remain as a powerful and dangerous stimulus to suicide. I have known one man who, believing himself to be Antichrist, desired death lest he should do material harm to the universe. Other and varied delusions may act similarly.

UNEXPECTED ATTEMPTS.

It must not be supposed that suicide in states of mental disorder alone occur with the acute and well-defined forms of insanity. Every now and then in an asylum astonishment is caused by the occurrence of suicide in a perfectly quiet and harmless patient, who has been long looked upon as dement, and who has been trusted as a useful hewer of wood or drawer of water. In some of these cases no reasonable explanation is to be found; in others, it represents a recurrence of the original mental disorder. In some it probably has been caused by some very slight and apparent insignificant emotional cause. In dementia the mental area has been reduced, and a little emotional storm causes great disturbance.

I think here it is well to refer to the danger which occurs in recurring cases, for in these a previous illness has been followed by asylum treatment, and the patient, though he has apparently got over the feeling of having been in an asylum, yet when sleepless and depressed, and pondering over the past, concludes that once more he is going to be sent away, and then he may attempt suicide. I am certain that there is more danger in a second than in a first attack of melancholia from the above cause. Again, patients recovering from any form of mental disorder, and certainly those who have suffered from mania, pass through a dangerous zone when they recall imperfectly the past, and feel the dread of insanity for themselves and their families. I have known a considerable number of suicides to occur while the patients were on leave of absence or on trial.

The danger of suicide differs, too, in the time of day in an asylum. The anxious hours are those of the early morning, and I think it always necessary to warn nurses of the dangers which occur just when the nurse is getting tired, but the melancholic mind is over-weighed by physical and moral depression. I must mention the fact that suicide occurs in children, though at present this is less common in England than among the Latin races. The act is generally impulsive, and in some cases has a sexual cause.

And now, though I know I have not covered all the ground, yet I think I have pointed out the sources of the greatest danger. Do what you will, suicides will happen, but it is your duty to recognise the danger and give warning, even if you cannot always get support. There is no doubt that over-watching may be injurious, and many years ago I wrote a paper on the danger of this suggestive caution. I may tell the case of a young medical man whose friends had spent all they could afford to have him treated in a first-rate private asylum, where he was never left for a moment, night or day. He was an unusually brilliant old University man. I took him into Bethlem, and told him he could not have the same amount of individual watching. He smiled and said, "No, I do not want it; but if you had men always practically saying you cannot do this or that, it would provoke the attempt." I trusted him more, and no evil resulted.

But be on your guard. I once trusted a youth, a son of a friend of mine. I gave him the run of my office and occupation on the solemn promise that he would never do anything which would cause me trouble. For a time all went well, but one night he developed serious symptoms which seemed due to an opiate. He died; no trace of the source of danger could be found till months after, in a book in my office, I found an apologetic and explanatory letter. You cannot trust their words, but at the same time you must not hound them on by suggestions. Suicides, like offences, will come, so be prepared for them.

THE Clapham Maternity Hospital's Dispensary for General Diseases has now added to its work at its Battersea centre a branch for carrying out the tuberculin treatment of phthisis on Dr. W. Camac Wilkinson's method.

THE TREATMENT OF MALIGNANT GROWTHS BY RADIUM.[1]

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ALL new discoveries in the way of modes of treatment have to pass through certain stages before their true value is determined. The first, and the shortest, stage, especially where, as in the case of radium, the sponsors are scientists of world-wide reputation, is that of philosophic doubt. The next, when the knowledge of the wonders the novelty may work has spread from the calm atmosphere of science and reached the popular imagination, is one of more or less wild enthusiasm. Then, as facts become better known and are more accurately weighed, a period of doubt and disappointment begins again, great in proportion to the greatness of the enthusiasm that preceded it, and the true value is only reached after the novelty has ceased to be a novelty and its merits have been sifted again and again by the most searching criticism. This last stage is the one at which radium, so far as its therapeutic use is concerned, has arrived. It is to be hoped that the proportion between the early enthusiasm and the later disappointment that is so often noted will not hold good here.

I am not going to mention the physical properties of radium. My audience is far better acquainted with them than I am. A surgeon in active practice may hope to read and understand a little of the work and discoveries of others. He can do no more and can only accept, and within the limits of his discretion apply, those discoveries to influence, so far as he can, the phenomena of disease. Nor do I wish to pass any opinion upon methods of treatment by means of the emanation of radium, used by itself, either internally or externally. It seems that, particularly when it is inhaled for any length of time, it may be of some use in cases of chronic gout; but I have had no experience of it myself, and the clinical records of the cases in which it has been employed, those at least that have been published, are too vague and too general in their statements to be of any real value. It is impossible to dissociate the reputed effects of radium emanation from those which may reasonably be considered to be due to suggestion (which I am sure plays a very important part), change of environment, alteration in diet, and the many other agencies which are at work at the foreign spas at which this method of treatment has been mainly tried. It is quite possible that it may prove of great value, and that the beneficial effect of many of the spas which in the present state of our knowledge seems sometimes to be difficult of explanation, may really be due to the radio-activity of their waters. At present this is little more than conjecture. We have not sufficient data upon which to form an opinion.

Influence of Radium on Biological Processes.

As a matter of fact, the whole question of the influence of radio-activity upon biological processes requires much more investigation. So far as the direct action of radium upon the tissues is concerned, the only certain effect that we know of is a lowering and depressing one, which if continued sufficiently long becomes definitely injurious and ultimately kills them. Possibly an exception may have to be made in the case of the vascular and connective tissue, but of this I shall speak later. The evidence with regard to any stimulating action is very doubtful. Cancer cells have not got it quite all their own way in the body. A considerable number is destroyed from time to time in the tissues. The agencies which lead to their destruction are vague and uncertain at present. The cases in which their power has been manifested to any extent are few and far between. But there are such agencies, and it has been suggested that radium may have the power of helping them by stimulating the tissues and strengthening the patient's power of resistance. Up to the present, however, there is hardly any evidence of this. It is not even certain that radium possesses such a power. It has been recorded, it is true, that in the case of the ova of certain worms cell division takes place more rapidly after exposure to radium than it does in control experiments, suggesting stimulation; but I am not aware of any similar record in connexion with the tissues of the body, and even in the case of these ova the acceleration was only of a temporary character. It died away almost at once and the growth of the irradiated ova was soon surpassed by that of the others. With the possible exception of the vascular and connective tissues, which I will deal with later, the only certain thing that can be said of the action of radium is that it kills the tissues immediately exposed to it, and if its influence falls short of this it enfeebles them and lowers their vitality so that they are unable to offer an effective resistance to injury.

Radium has been described as possessing a cumulative action, because, if there is a second exposure before the tissues have thoroughly recovered from the first, the effect is usually much greater. But this is incorrect. Radium has no such action. The second exposure is more destructive than the first, not because the influence of the radiation is cumulative, but because the resistance of the tissues has been lowered and they have not yet had time to recover. In the same way it is incorrect to speak of what is commonly called the selective action of radium. Radium has no selective action. The cells of certain tissues, those of the reproductive organs and the nervous system, for example, young cells generally, and what may be regarded as the more highly specialised among cells are peculiarly susceptible to the influence of radium. But to speak of this as evidence of a selective power possessed by radium is to put the cart before the horse. The difference in effect depends upon the different power of resistance offered by the tissues, not upon any selective action of the rays. No one would speak of sun rays as possessing the power of selection because blonde complexions are affected by them more rapidly and more energetically than brunettes.

Tissue Reaction to Radium.

The reaction of the vascular and connective tissues which I have already mentioned, and upon which so much of the therapeutic value of radium depends, at first sight appears to be different. The immediate effect of the application of radium is to cause dilatation of the vessels in and around the irradiated area. This is very well seen in the case of the conjunctiva when radium is applied in the neighbourhood of the eye. In a little while this congestion passes off and many days later, if the application has been prolonged, is succeeded by changes of a more extensive character. The fibres become softened, the cells multiply and take on more of an embryonic character, and the whole tissue undergoes proliferation and becomes softer and more succulent. It may be that this is due to some direct but delayed action of radium: that radium here is exercising an influence which it certainly does not possess over other tissues; but it is much more natural to suppose that this change is simply the result of the normal processes of repair and restoration, which are being carried out as rapidly as possible by the connective tissues after they themselves have recovered, in order to replace the more highly specialised cells which have been destroyed and are in process of removal. Whatever the pathology, it is upon this proliferation of the connective tissue, after the more susceptible cells of a malignant growth have been destroyed, that the excellent cosmetic effect of the cicatrices left depends. It is now certain that the framework which pervades a carcinoma is part of the tissues of the host that supports the growth; and it is this stroma, stimulated to increased activity by the necessity for disposing of the cells of the growth that have been killed by the radium, which provides the embryonic tissue, out of which the scar tissue is ultimately developed. Whether the conversion of a rapidly growing embryonic-celled sarcoma into a non-malignant fibroma, which has been described by several writers, can be explained in the same way, is a matter upon which I can offer no opinion. I have not myself met with anything of the kind. In all the cases I have seen in which sarcomatous tissue has disappeared under the influence of radium, there has simply been a mass of fibroid cicatricial tissue left, quite unlike a fibroma in structure.

The success of radium in the treatment of malignant growths depends upon the greater susceptibility of malignant cells under certain conditions of application, their quiet necrosis and removal, and the gradual substitution for them of a uniformly distributed growth of connective tissue which, in the absence of infective organisms, slowly becomes

[1] A paper read before the Röntgen Society on May 4th, 1911.

organised without contracting in the way that an ordinary scar does.

Method of Application.

The only rays that can be usefully employed for this purpose are the hard β and γ ones. So far as this is concerned the α and soft β rays may be left upon one side. How these are to be filtered off, the material and thickness of the screens that should be used, I must leave to the physicists who alone can judge of such matters. I can only deal with the action of these rays from the clinical point of view, and looking at it from this there are certain deductions which I think are justified if the object is to produce the maximum effect upon a malignant growth with the least possible risk to the normal tissues around and to the life of the patient.

The first of these is the necessity of flooding the region it is desired to treat with an abundance of rays from all sides, not merely over its whole area, but throughout its whole depth. This is easy when the growth is small and shallow, like most rodent ulcers; but very difficult with large tumours, and in many instances simply cannot be done with the means at present at our command. The reason why the irradiation should be carried out so thoroughly is not far to seek. The immediate effect of radium is to cause an increased flow of blood through the whole irradiated area, rendering the metabolism of the tissues much more active. Now this condition is especially favourable to the growth and dissemination of malignant tumours. There is nothing that makes cancer spread more rapidly than the hyperæmia produced by the inefficient employment of caustics or even by poultices. The worst cases I have ever seen were caused in this way. With radium this hyperæmia cannot be avoided or prevented, though it may be checked a little in some instances by carefully adjusted pressure. But if while it is present hard β and γ rays in sufficient quantity are driven into the tumour from all sides, from the surface above and from the healthy tissues around and beneath, no harm is done. The cancer cells, especially those around the growth, on its borders, the youngest, most active, and presumably the most susceptible, are the first to be attacked, and are at least checked in their growth, if they are not killed. If, on the other hand, owing to the size of the mass that has to be irradiated, the rays are applied only to a portion of the surface, or even to its whole surface, without being sufficiently strong or numerous to penetrate actively through the whole depth, the irradiation may well do almost as much harm as good. The cells that bear the brunt of the hard β and γ rays may be killed, but the more distant ones escape and grow all the more rapidly because of the more abundant blood-supply they receive. I have several times seen the outlying portions of a growth spread at a greatly increased rate while the central was being successfully treated by radium, and though I cannot prove it I cannot help thinking that I have seen the deep extension of a growth accelerated in the same way. I am sure that there is no inconsiderable degree of risk in treating any but small and superficial growths with the amount of radium that is at the command of most observers at the present time. What is wanted is a sufficient quantity to deal with a growth effectually, to surround it and invade it from all sides at once, and this at present we have not got. The cross-fire system of Wickham is a step in this direction, but it needs to be carried a great deal further. According to Bazet, 10 centigrammes of the pure salt—not the quarter mixture that usually passes current—is the minimum that should be at the disposal of an operator if he wishes to treat malignant tumours successfully. It is to be feared that it will be some time before such an amount is at the disposal of any private individual over here.

Radium and Metastatic Growths.

Another very important point in treating malignant growths with radium is the question of metastases. Malignant growths spread from their original site partly by a process of direct extension through the interstices of the tissues, partly by growing fragments becoming detached from the main body, and carried into distant parts by the lymphatics and blood-vessels. No hard-and-fast line can be drawn between these two methods; one is merely an extension of the other, and there is no evidence that either of the two is controlled by any other than purely mechanical forces. The cells spread in the direction of least resistance, along an open channel if they can gain access to it; and because of their structure the cells of certain growths, such as sarcomata, spread more easily through the blood-vessels, while the cells of most carcinomata travel chiefly along the lymphatics. How soon and to what extent dissemination takes place depends upon many considerations, the nature of the growth, the locality, the amount of disturbance it meets with, and very likely other conditions as well. But there can be no doubt that, with the possible exception of rodent ulcer, dissemination takes place at a much earlier period and to a much greater extent than is usually believed; and as radium cannot prevent this process, or have the slightest influence over cells after they have once left the affected area, it is most essential that time should never be wasted in trying radium in the case of any tumour liable to metastases if there is any other more efficient method possible. Because of this inability to check metastasis the use of radium in the case of malignant growths other than rodent ulcer should be reserved for cases that are either inoperable or inaccessible to ordinary methods. There are parts of the body, the œsophagus, for example, in which operation is impracticable but which are quite accessible to radium. Here undoubtedly is a wide field for its use, but where surgical removal can be carried out exposure to radium should not be considered an alternative line of treatment. This caution is all the more necessary because partly owing to the natural desire to avoid an operation, partly from an exaggerated conception of the power of radium, there is a very great tendency on the part of the ignorant public to insist upon what they call trying radium, and wasting the most precious time of all.

If the use of radium is restricted for the present to cases in which other methods are inapplicable it must not be blamed if it fails to produce striking results. It does not have the chance. But there is a great field for its employment in the treatment of the numerous non-malignant growths, especially on the skin, which so often as age advances change their character and become malignant. To get rid of these without an operation and without a scar before they have become dangerous is of inestimable value.

Danger of Disturbing the Growth.

This question of metastases is important in another way. With the view of utilising to their utmost the small quantities of radium we possess, it has become the practice to introduce radium tubes into the substance of malignant growths. In this way the whole of the radiation is made use of, instead of only a portion, as when the tube is laid upon the surface. The radium tube, which is of very small diameter, can be easily introduced to any required depth by means of a trocar and cannula, and as it has a silver wire attached to one end of it can be left *in situ* and withdrawn when desired. The amount of manipulation required for carrying out this introduction is, I admit, very small; but all manipulation in the case of malignant growths, especially soft rapidly growing ones, is most undesirable. There is no better method for causing dissemination of the growth. The practice which used to be in vogue of cutting into a tumour before removing it for the purpose of verifying the diagnosis has been quite abandoned for this reason; and there can be no question that introducing a trocar and cannula into a growth is not desirable and should be avoided wherever it can be. Radiation should always be directed from the circumference towards the centre, especially in the case of a growth that is spreading from its periphery, and the growth itself should be treated with the utmost gentleness.

The same argument holds good with regard to the practice which has been recommended of scraping away all the exuberant portion of a superficial growth with a Volkmann's spoon and then applying radium to the base with the view of getting rid of any outlying cells that have been left. Undoubtedly this method enables radium to be used much more efficiently, as the rays are not wasted on the superficial portions of the growths; and it may leave a less conspicuous scar than that which would be caused by excision; but it is open to the grave objection that the very process used to get rid of the upper portion of the growth may, and in some instances undoubtedly does, assist in its dissemination. It is only recently that surgeons have realised the absolute necessity of never letting a cancer cell or the blood that trickles from the neighbourhood of a cancerous growth in the course of an operation come near the, as yet, uninfected tissues of the patient. It is certain to cause dissemination.

Where a growth has been excised, not removed in a fragmentary way, there is not the same objection to applying radium to the surface left. The whole growth has been removed; there are not, or there ought not to be, any cancer cells along the line of section to cause dissemination.

Malignant Tumours Suitable for Treatment.

With regard to the particular variety of malignant tumour in which radium is most successful, it must be borne in mind that our present system of classification of tumours by structure is at best only a rough guide to their clinical character, and it is on this and not on microscopic appearances that the question of the value of radium turns. Cancer of the breast, for example, in a woman under 35 years of age may have the same microscopic structure as that from a patient of 60, but the prognosis, whatever treatment is adopted, is very different; and while many sarcomata run their course in a few months, I have known instances in which life has been prolonged for many years, even though the organ involved was the same and the growth apparently of the same description. There are so many other factors governing malignant growths which have to be taken into consideration, factors of which we know as yet hardly anything, that even if we were thoroughly acquainted with the working of radium and its possibilities it would not be possible to say for certain beforehand whether its use would be beneficial, or how far it would be beneficial in any particular instance. Growths, which so far as we can tell are identical in character, size, and locality, may react to radium in an entirely different way, even though the same specimen is used in exactly the same manner. I have known radium fail completely in what was to all appearance characteristic rodent ulcer, though these are the very cases in which it is usually most successful.

Leaving upon one side all questions of the size and depth of tumours, which after all are merely relative to the quantity and activity of the rays that can be brought to bear upon them, the factors that seem to me to weigh most in determining the clinical value of radium are slowness of growth and what, for want of a better term, must be called mildness of malignancy. This is the reason why radium is so successful as a rule in rodent ulcer. The actual growth is usually small in quantity and superficial. The increase in size is very slow. Metastases are rare; local extension takes place very gradually; and the cells themselves have so little power of resistance that it is reported that they have been killed by zinc ionisation. Given similar conditions in other malignant growths and radium would probably succeed as well in them; but unfortunately the cases in which all these conditions are found grouped together, as they are in rodent ulcer, are few and far between. Either growth is rapid, or there are deep extensions inaccessible to rays at present at our command, or metastases take place early, so that though radium does some good and gives some relief it fails to effect a cure. Even in the case of rodent ulcer it is only when these conditions are fulfilled that radium really succeeds. If, for example, a rodent ulcer has been irritated by ineffectual attempts at removal or by septic infection, so that the margins, instead of being sharply marked, are ill-defined, swollen, and hyperæmic, radium is very likely to fail. Indeed, if it were not that improvement under radiation, when it does occur, begins very soon, so that little time is lost by trying it, and that sometimes when it stops short of actual cure the improvement progresses so far that other methods of treatment which before were out of the question become feasible, I am not quite sure that it is wise to try radium in such cases.

So far as our present knowledge is concerned, with the small quantities that we have at our command, radium can only be relied upon, and that to a limited extent, in cases of malignant disease in which growth is slow and the degree of malignancy relatively slight. On the other hand, it is of the greatest value in what may be called the pre-malignant stage—that is to say, in removing growths which not infrequently become malignant as age advances, without an operation and what is very important, not merely for cosmetic but for clinical reasons, without leaving much of a scar; and there is good reason to hope that if the small quantities we possess now are capable of dealing with growths of relatively mild malignancy, larger amounts, when we can get them, will prove equally successful in circumstances of greater difficulty.

Wimpole-street, W.

THE RADIUM TREATMENT OF CANCER: EXPERIENCES OF OVER 100 CASES.

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IT is necessary in treating cancer—and I include under this head all forms of malignant growths—to have a clear conception of its nature, of its modes of growth, and of its clinical course.

There are several forms of malignant disease, but they all commence as a local disease, which spreads according to definite laws. They all show a tendency to local peripheral extension, and the majority also spread along the lymphatic channels by permeation. A few extend by the blood stream only, without to any degree invading the lymphatics, the method of extension being determined by the seat of the primary growth and its particular type. One form, the rodent ulcer, extends peripherally only, and occasionally growths of other types are met which for many years do the same. Their usual tendency, however, is to kill the patient, either by exhaustion, toxæmia, pain, or hæmorrhage from the local growth or from the extension of the disease to vital organs.

The time of commencement and the rate of increase both seem to be influenced profoundly by the state of the patient's health. The start, when it can be traced, dates in the majority of cases to a period of lowered general health, a time of worry and anxiety, especially of overwork or of some other illness. The course of the disease is subject to similar influences; a lowering of the vital resistance will allow a quiescent growth to spring into activity, while, on the other hand, an improvement in the general health will often stay the advance of the disease. It is also an undoubted fact that spontaneous disappearance of all macroscopic evidence of disease may occur in very rare instances without any treatment. I have seen a growth which on several separate occasions started into activity immediately after an attack of influenza, becoming quiescent after the first three or four attacks, but each time after a longer and longer period of activity, and, finally, progressing steadily. The same thing is often seen with rodent ulcer; for years it may remain stationary and then it will start into activity, very likely during a time of obvious ill-health. We must assume, then, that the resistance of the patient plays some part in checking the progress of the disease, and will in very rare cases cure it altogether. This is a most important consideration in dealing with the complaint and one all too little recognised. General treatment, directed at increasing the resistance of the patient, must be employed, whatever other method is used to combat the disease. Sampson Handley[1] in his Hunterian lecture in 1909 recommended open-air treatment on strict sanatorium lines, and a general adoption of this would help any local measures considerably. Bagge[2] claims good results from what he calls increasing sensitiveness of tumours to X rays, by the general administration of high-frequency currents, the injection of arsenical compounds, and dosage with iodides; his methods are really only means of increasing the resistance of the patient, who is enabled by the help of X rays to stem the disease.

Now I will pass on to outline with the utmost brevity the physical characteristics of the agent the effects of which I am going to describe.

Radium is a metal, all of the salts of which give off rays in proportion to the amount of metallic radium they contain. Most of the rays are not due to the original radium salt, but to a gas (the emanation) they give off, and the subsequent products into which this gas is transferred.[3] Therefore, to retain the largest amount of the emanation and its products it is necessary to seal up the radium in some way, and this is done by enclosing it in a metal or glass tube or by covering it with a special varnish.

The rays given off are of three kinds, α, β, and γ. The α rays are those the action of which we see in a spinthariscope, which is a screen of zinc sulphide, in front of which is a

[1] Brit. Med. Jour., 1909, vol. i., p. 582.
[2] Brussels International Congress of Radiology and Electricity, 1910.
[3] Rutherford: Radio-activity. Finzi: Proceedings of the Royal Society of Medicine, January, 1910.

small fragment of radium. They are minute particles, the size of atoms, carrying a positive charge of electricity, and they can pass through very thin layers of metal (about 1/30 mm. aluminium is the thickest). The β rays are much smaller particles and they carry a negative electrical charge. Their size is about 1/800th that of an atom of hydrogen. It takes 4 to 8 mm. of platinum or lead to absorb the most penetrating, but they consist of rays of very widely differing penetration. The γ rays are in all probability not particles but ether vibrations, of a similar nature to X rays, with much greater power of penetration however; in fact, they will pass with ease through an inch of lead, and 2 or 3 ft. will not suppress the most penetrating of them.

Thus it will be seen that by placing between the radium and the patient a sheet, screen, or filter of metal, it will be possible to prevent the less penetrating rays from reaching him, and to use either the γ rays only or a mixture of γ and penetrating β rays, the proportion of which will vary according to the thickness of the screen and the nature of the metal employed. This is known as filtration [4] and was first used by Wickham but systematically and scientifically studied by Dominici. The metals which stop the largest amount of β rays for a given thickness are platinum and lead.

The rays are given out in all directions, so that if the radium apparatus is buried in the tissues all the rays from it are used, while if it is employed externally less than half the total rays are used. This point is often forgotten with flat applicators, through the back of which just as many penetrating rays escape as through the front.

The intensity of the rays, like that of light, varies *inversely as the square of the distance;* for instance, a surface at 10 in. from the radium will receive only a hundredth part ($1/10^2$) of the rays which it would at 1 in., as it is ten times the distance away. This fact is a most important one, and for this reason: in treating a growth through the skin, even if the radium is separated from the surface for a small distance, and only the rays which will readily penetrate the skin are used, as large a dose is given as the skin can stand long before the deep parts receive the maximal dose. In fact, it is only the extreme selective action of the rays on cancer cells that makes external treatment possible at all. Take a concrete instance. Supposing we have a growth, the deepest part of which is 2 in. from the skin. If the radium is placed 1 in. away from the skin it will be 3 in. from the deepest part of the growth; this will, therefore, only receive one-ninth part of the dose the skin receives in the same time. The further the radium is from the skin the less will this difference be; thus, if in the same illustration the radium were placed 2 in. instead of 1 from the skin it would be 4 in. from the deepest part of the tumour—i.e., double the distance from the skin—and the deepest part would, therefore, get a quarter of the dose the skin received. But as the skin is double as far from the radium as in the first case, it will only receive a quarter the amount of rays, and the full dose will take four times as long to give.

There is a further small physical point, and that is, that when the rays strike a substance this itself gives out secondary rays, the penetrating power of which varies with the substance, the most penetrating being given out by materials of the highest specific gravity. With lead they have a penetration about equal to that of a "soft" X ray tube.

Action of Radium on Growths.

As would be expected, the different sorts of radiation have different effects. In most applications the α rays are excluded by the receptacle in which the substance is contained. Their action could be investigated by using polonium, which gives off α rays only, but it is difficult to see how they can produce any change through the normal skin, as they would probably all be absorbed by the epidermis. When radium is used without a filter it is the action of the β rays which predominates, as the time of application is too short to allow of any appreciable effect from the γ rays, which are present in much smaller quantity.

Both the β and the γ rays exert a selective action on most neoplasms, but it appears to be much greater in the case of the γ than of the β rays. Their histological action, too, is different. After using a radiation containing a majority of β rays one sees a round-cell infiltration of the growth, a most marked proliferation of the endothelium of the blood-vessels, with an increase in the fibrous tissues in the growth. This increase of fibrous tissue seems more than can be accounted for by a mere disappearance of the cells leaving the stroma, and it is probably an active formation of fibrous tissue as a result of the inflammatory action. Now, when employing a predominance of γ rays we do not usually see round-celled infiltration to so great an extent, and what there is may be due to unexcluded β rays, for I usually work with 2½ mm. platinum as a screen, and this lets some β rays through. With this proportion of rays also the endothelial proliferation is either much less marked or absent.

When an apparatus, arranged to let through chiefly γ rays, is buried in a growth there is an apparent increase of fibrous tissues round the place where the tube was buried; a little further off cells are seen shrivelled up, and further still, cells which retain their shape but stain badly, and the nuclei of which do not stain; and then, finally, cells apparently normal. Now, all this points to the conclusion that the apparent increase of fibrous tissue with γ rays is simply due to the disappearance of the cells, the stroma remaining. This, of course, applies to carcinoma. With sarcoma it must be different, but I cannot as yet give my personal experience on this point. These changes are also seen in some growths treated through the skin with γ rays, though the growth receives a much smaller dose than the skin itself. The normal tissue is unaltered, while the morbid cells are absorbed after the same dose; a larger dose would destroy the healthy cells too. So there is a selective action of both the β and γ rays, much more marked in the case of the latter, which picks out the cells of certain neoplasms and destroys them. The selection ratio between healthy and cancer cells, which I will call the "selectivity ratio," varies in degree with different types of growth. Where it reaches its maximum it must have some 20 times greater effect on neoplastic cells than on healthy ones. In other cases—e.g., rapidly growing epithelioma of the tongue—this selective action either does not occur or is so little marked that radium does no good. The selectivity ratio cannot be accurately measured, but only guessed at from a consideration of the physics of the rays and the clinical results. If the selectivity ratio of a growth is 1:5, and it is probably about this for many spheroidal-celled carcinomata, it means that it will take five times the dose which destroys the cells of the growth to damage the normal cells. The ratio appears to be highest in some forms of sarcoma and spheroidal-celled carcinoma, and lowest, or possibly even reversed, in some types of epithelioma.

It is quite a mistake to suppose that this action can be obtained on superficial growths only. This too prevalent notion has arisen from the results obtained by using unfiltered radiations and from a lack of knowledge of the physical laws governing the treatment. The best way to treat deep growths is by embedding the radium apparatus in the malignant mass, but it is still just as necessary to filter the rays in order to get the selective action. In treating deep growths from outside it is necessary to place the radium tube some distance from the skin, as explained above.

How the selective action is brought about is not known. It is not due to anything actually introduced from the radium, as the γ rays are held to be merely ether pulses and not material particles. It has been suggested that the cells of a cancer are more easily damaged than the healthy cells surrounding them, and that any agent which injures the tissues will attack them first. This cannot be the case, as the γ rays are much more powerful than X rays in picking out the cells of the neoplasm, and infinitely more powerful than a simple irritant. If the theory were true it would be just as effective to inject the growth with an irritant as to treat it with radium. A clinical test can be made in rodent ulcer. Treated with radium (filtered rays) it can be made to disappear with no evidence of any inflammation. Treating it with X rays it is generally necessary to produce an inflammatory reaction of mild degree. With carbon dioxide snow, however, a most intense inflammation or even superficial necrosis is caused.

When a full dose of radium rays filtered through 1½ mm. of lead or platinum is used on the skin, it is not uncommon to see a double reaction. The first erythema begins about a fortnight after the treatment, fades away, and the second

[4] Dominici: Archives Générales de Médecine, July, 1909. Wickham: Radium-thérapie.

one does not appear for five weeks. It seems to be probable that the second one is due to the γ rays. The first one is probably due to the β rays, which have this latent period in the small doses that escape through the filter. This view is supported by the fact that if only $\frac{1}{2}$ mm. platinum is used, and the time reduced so that just a full dose is still given, the second reaction does not occur, but the first appears after a fortnight, and sometimes earlier. But there is also a bare possibility that the first erythema is due to the secondary radiation from the metal of the filter. I do not, however, recollect ever having seen the phenomenon when using $2\frac{1}{2}$ mm. of platinum or lead, which should give more secondary radiation but less β rays. Epilation occurs after a latent period of about three weeks with a full dose. The erythema is followed by a pigmentation which subsequently slowly fades away, increasing, however, usually until about the fifth or sixth week after the application.

A further question in the action of the rays on cancer must often arise, and it is this: Does the absorption of a tumour have any effect on metastases? I have evidence that, in some cases at any rate, a metastasis may retrogress on the treatment of the primary growth or another metastasis. It is difficult to understand why this does not occur to an even greater extent in growths which disappear. The destruction and absorption of the cancer cells should cause the formation of antibodies, which, in their turn, should lead to the destruction and absorption of other cancer cells. As I have said, this does occur to some extent, but such a small and uncertain one that every known metastasis should be treated, and also the situations in which metastases may have occurred, but may still be of microscopical character.

Another question is: Can the rays exert a selective action on the cancer cells to make them grow faster? Under certain conditions they possibly may. We all know that certain drugs exert exactly the opposite action in small doses to what they do in large. For instance, small doses of chloroform stimulate, while large depress. The same may conceivably occur with radium in some cases, when the growth or outlying part of it receives only small doses, and this teaches us to treat the whole of a growth thoroughly, and to do so in a few big doses and not frequent small ones. In growths which are absorbed this effect may be to a certain extent counteracted by the formation of the antibodies I have just alluded to, but this consideration should not prevent us focussing our attention on every possible outlying deposit of cancer and giving it its due dose of rays.

The action of the rays on a growth does not become manifest at once, though it probably begins as soon as any of the cells have received a sufficient dose. The earliest change I have seen was a marked diminution of pain in one case, of the swelling in another, and of fœtor and discharge in others, occurring about one and a half days from the commencement of the application. But all these effects—the shrinking of the growth, the diminution of the pain, the lessening of the discharge and fœtor—continue, and reach a maximum in four or five weeks. There is, however, one effect which starts about the third day and seldom lasts more than a fortnight, and that is a toxæmia which often occurs with readily absorbed growths, and is shown by malaise, fever, discomfort, and occasionally headaches. It does not occur with all absorbed growths, and in fact many patients feel in better health quite soon after the treatment. It probably depends upon how profound has been the depressing effect of the disease and how rapidly the radium is affecting the growth.

With β and γ rays the latent period decreases as the dose increases, so that a *severe* β ray burn commences almost immediately after the application.

A tumour treated by external application will often grow smaller without any effect on the skin being noticeable, but a tumour which is rapidly absorbing sometimes causes a general pink flush in the skin over it and often a considerable amount of œdema all round the growth.

The Class of Case Suitable for Treatment.

This depends on (1) the nature of the malignant growth; (2) the position and size of the deposits; and (3) the general condition of the patient.

1. It is necessary to grasp the fact that some growths, however small, do not respond to radium treatment. Those I know of at present are—epitheliomata of the tongue and of the vulva. I recently heard of a patient with a small epithelioma of the tongue of about the size of a pea who had radium treatment. Now this is quite unjustifiable, and the result showed it. The epithelioma steadily grew, and in the end had to be surgically removed. Possibly no harm was done, but valuable time may have been lost.

Too great importance cannot be attached to the histological nature of the neoplasm. Two growths of the same histological structure in similar situations will show a great similarity in their behaviour to radium. There are, however, comparatively few that one can say with certainty will or will not disappear, but their number is increasing with our widening experience. Consideration of the histological nature, together with the position and general characters of the tumour, generally gives a very clear idea of whether the case will or will not be cured, relieved, or aggravated by the treatment. The surgeon who says: "I submitted such and such a case for radium treatment; now, if ever there was a case in which it should have done good it was in this one," entirely misses the point. On no single case can the result be judged; it is only by the experience of many cases.

2. The position and size of the growth and secondary deposits are important only when considered in connexion with the readiness with which they react to radium. What one has to determine is how to give a sufficient dose to the whole of the growth and to glands or other parts which may, or do, contain secondary deposits. The question whether a growth is inoperable or not will only influence us in so far as we do our best to persuade the patient who has an operable growth, which we have the slightest doubt about curing, to submit to an operation, followed by prophylactic treatment with radium. The case will sometimes arise, when an operation is very dangerous or produces great deformity or discomfort, in which we can advise the patient to give the radium a trial, and submit to the operation if it fails, risking the time wasted by the procedure. The really important thing is how the neoplasm reacts to radium rays—i.e., what selective power the rays exert on it. If we have a growth with high selectivity ratio we can treat enormous masses.

Accessibility is a different matter. The growth may be in a situation where it is difficult to tolerate the radium tube for long; for instance, the back of the pharynx. In these cases a little ingenuity and experience will frequently convert a difficult application into an easy one. An instance of this is the introduction of a radium tube into a carcinomatous stricture of the œsophagus, by means of Dr. Hill's split œsophagoscope tube, and the use of my special apparatus for its retention in this situation.

3. The condition of the patient has to be taken into consideration for several reasons. In cases with marked cachexia a growth which one would have imagined to be suitable will sometimes not be improved by radium treatment. An advanced cachexia also usually indicates considerable extension of the growth or many metastases. We cannot push the treatment so far in subjects in this weak state as we might otherwise do, for the toxæmia following might be sufficient to kill them. It seems necessary, too, that the patient should have some power of resistance remaining to enable him to cope with the growth.

Principles of Treatment.

I laid down, in a communication to the Royal Society of Medicine[5] over a year ago, four cardinal principles of treatment, and I now adhere to these more strongly than ever. They are: (1) treat thoroughly the whole tumour and the site of any possible metastases; (2) adequately filter the rays; (3) use as large an amount of radium as possible; and (4) give maximal exposures.

1. *Treat thoroughly the whole tumour and the site of any possible metastasis.*—It is necessary, if we treat a case at all, to treat the tumour thoroughly; attack it from inside if possible by burying radium tubes in it, and otherwise attack it from every possible vantage point. In the case of a growth propagated by glandular metastasis it is also necessary to dose the lymphatic glands, even if not obviously diseased, as they may nevertheless be infected.

2. *Adequately filter the rays.*—The necessity of using a large proportion of γ rays has been pointed out, and this is done by causing the radiations which reach the patient to pass through a metal filter. The length of the application is much extended by this, but the increase in selective action renders the procedure necessary. Filters of platinum or lead, 1 mm. or more thick, must be employed. It is necessary to

[5] Proceedings of the Royal Society of Medicine, January, 1910.

use them also when burying radium in the tumour, because otherwise much more inflammatory action occurs than is desirable.

3. *Use as much radium as possible.*—It is most important to use as large an amount of radium as one possibly can. 100 mg. for six hours gives better results than 10 mg. for 60 hours, though theoretically the same dose of rays has been given. I am now using what is sold as 205 mg. of radium bromide. The total value of this is £3280. 100 mg. of this has been very kindly lent to me by Mr. Walter Butcher of Tring. The exact amounts are 83·5, 47·2, and 40·7 mg. of *anhydrous* radium bromide, Rutherford standard.

4. *Give maximal doses.*—It has been recommended by some to give small doses frequently. This, in my opinion, is emphatically not a good treatment for neoplasms. The small doses have less effect on the skin, but they also have less effect on the growth. As large a dose as is possible without doing damage must be given, and not repeated for five or six weeks, as a rule. Remember that you *cannot give too much* to the cancer cells if you do not damage the surrounding tissue.

Apparatus Used.

I have indicated the necessity of sealing up the radium hermetically, of employing metallic filters, of giving long exposures, and of overcoming the difficulties of introducing the tube into awkward situations.

FIG. 1.

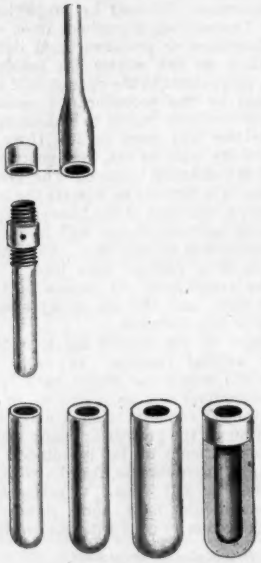


Fig. 1 shows the most recent apparatus I have designed and which I have now had in use for some ten months.[6] It is a veritable *multum in parvo*, as the figure is drawn to scale and the tube it represents contains £1600 worth of radium carbonate. It consists of an inner platinum tube ½ mm. thick, sealed with gold solder, containing an insoluble radium salt. The stopper is long and has two threads cut upon it with an intermediate space where the stopper is pierced with a pinhole to obtain some leverage for screwing on the rest of the apparatus. Screens of platinum ½, 1, or 2 mm. thick screw into the lower thread, while the upper one takes a cap or a long flexible silver rod. One screw leaves the inner tube bare in half its extent.

Fig. 2 shows the apparatus ready for use and also the arrangement of the tube and screens. The radium then forms the end of the rod for œsophageal applications, or is a compact little box for insertion into the substance of a tumour or for other purposes. The rubber tube with the blind end is to cut off secondary radiations formed in the platinum, which have little penetrating power and whose action is not yet known but is probably harmful.

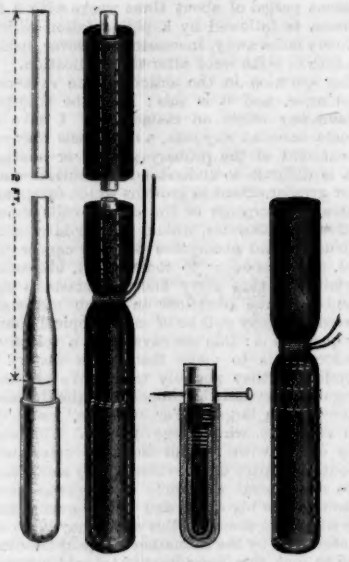
[6] The apparatus is made for me by Messrs. Johnson, Matthey, and Co.

Technique.

For cancer work I can see no advantage in flat applicators, though for superficial nævi and skin diseases they are better. They are not nearly so universally useful, and it is more difficult to gauge the dose. With several tubes a similar effect can be obtained by putting them side by side, quite close together.

External treatment is very simple. The tube covered by its screen is merely strapped securely in position with a requisite thickness of lint intervening between it and the

FIG. 2.



skin. The number of layers of this lint will depend on the depth of the tumour; the deeper the tumour the greater will be the thickness of lint and the longer the time taken to give the dose. In the case of an ulcerated surface the radium tube and screen is placed in a rubber covering only, and laid on the ulcer; it is then possible to give a much larger dose, for three or four times the exposure which would produce a very severe burn on healthy skin can be applied with impunity to the tissues of a growth. For instance, when the tubes covered with 1½ mm. thickness of platinum are embedded in a growth they are left *in situ* for 48 hours, and without untoward effects.

The treatment of internal surfaces in not so easy. Here again, if the radium can only be kept in contact with an ulcerated growth and not allowed to touch healthy mucous membrane, a much larger and more efficient dose can be given. An exact œsophageal application is one of the most difficult, but by the skilled use of a direct vision œsophagoscope can usually be made fairly simple. I always like to control these applications by an X ray examination.

Similarly, in treating a growth high up in the rectum the sigmoidoscope is of great assistance. The radium is in this case placed in a rubber tube with a bougie behind it, which is strapped securely in position by a broad piece of strapping, going from the back along the whole length of that part of the bougie which is outside, and on to the front of the abdomen.

For a urethral or bladder application, again, my apparatus, as used for the œsophagus, may be used, or the radium tube may be placed near the end of a catheter.

The upper part of the pharynx is best treated by introducing a silk through the nose by means of a Belloc's sound, and then drawing the radium tubes through the mouth and fixing them in the proper position. For the lower part of the pharynx it is tied in the middle of a bougie which is passed into the œsophagus until the radium comes into the proper position. For this idea I am much indebted to Dr. William Hill.

In the vagina it can be packed in position by cotton-wool or gauze.

As to inserting the radium apparatus into a tumour, this usually presents no difficulty. Care must be taken to insert the radium so deep that it does not burn the skin. I usually tie my apparatus tightly into the rubber tube (see Fig. 1) and place it in pure liquefied carbolic acid for about 10 minutes, which I wash off with sterile water before insertion.

The object of the rubber is to protect the tube and to cut off secondary radiations of low penetrating power. The use of lint in external applications is to cut off these same radiations and to separate the radium a definite distance from the skin.

Dosage.

This is a very difficult question, as one has to push the dose to the limit without damaging healthy structures; one must go to the extreme edge of the precipice without falling over. If the quantity of radium (definitely standardised), the filter, and the distance from the nearest healthy tissue remain constant, the dose varies directly as the time. The time to give the same dose varies indirectly as the quantity of radium—e.g., double the amount of radium will give the dose in half the time. If the distance of the nearest healthy tissue from the radium be increased, the time to give a dose will be increased proportionately to the square of this distance. It must further be remembered that if growth separates the radium completely from healthy tissue a very much larger dose can be given. When tissues are partially infiltrated with growth they can also stand a larger dose without damage.

The larger the quantity of radium used the better the results, and though the amount I use, 205 milligrammes, is large compared to what most people employ, it is not nearly enough. I may say that Dominici of Paris uses in the ordinary way 150 mg., though he can for a special case obtain 300 mg. altogether, and I believe Wickham uses similar amounts. I regard the absolute minimum amount for cancer treatment as 50 mg. Less may give an occasional success, but cannot be depended on. The minimum thickness of filter should be 1½ mm. of platinum. Whether one obtains better results with thicker filters than this I am not yet definitely prepared to say; I believe one does. If the 50 mg. tube (containing 47·3 mg. Rutherford standard pure $RaBr_2$), with a screen of 1½ mm. of platinum, be placed in a rubber tube on the skin or mucous membrane, the dose is about 11 hours.

Results.

I have treated, or have under treatment, excluding rodent ulcer, altogether 117 cases. All except 4 of these were inoperable. I exclude 3 cases subsequently operated on, 4 cases treated for prophylaxis only, 8 cases in which sufficient treatment was refused, and 3 cases not treated long enough to judge the result—in all 18 cases. This leaves 99 cases.

	Treatment complete.		Treatment incomplete.
Complete local disappearance of the growth	12	.....	0
Very great relief	10	.....	10*
Substantial relief	30	.....	12
No relief	25	.....	0
Total	77		22

* In 7 of these the growths are quite likely to disappear.

Of the cases in which growths have completely disappeared, two patients have died from intercurrent disease—the one from cardiac disease and cerebral embolism, and the other from a strangulated umbilical hernia. In the first no necropsy was obtained, but there were no symptoms of recurrence; in the other there was a necropsy, and there were deep recurrences in the liver, &c.[7]

In one case (lip) there is no local recurrence, but the marked cachexia (18 months after treatment commenced) leads one to suspect deep recurrences; no definite sign of these is present, however. In two other cases there are recurrences.

My later cases in which I have had 200 mg. instead of 50, which I used at first and 100 later on, show promise of giving much better results than the earlier ones, and in the same case an increase in the rate of improvement has sometimes been seen after the larger amount was used.

[7] Proceedings of the Royal Society of Medicine, 1909.

Many of the cases were treated for relief only, without any possibility of cure, and these, of course, dilute the results; but even then complete local disappearance took place in about 12 per cent. of my cases, and there are several others well on their way to disappear. One case (a hospital patient) was nearly well, and then refused to give the time to further treatment, on the ground that he was so well, although the seriousness of his complaint was pointed out to him, and every endeavour made to continue the treatment.

It will be noticed that there was substantial relief in a very large proportion of the patients, and this alone would justify the treatment. The relief obtained has been diminution or disappearance of pain, relief of pressure, opening of strictures, and healing of ulcers. Local growths have often disappeared, while deep ones we could not reach have advanced. The most marked case of relief I have ever seen was in a recurrence after carcinoma of the breast, involving the nerves in the axilla and causing agonising pain down the arm, which was completely relieved in 48 hours from the commencement of the treatment, and was prevented from returning by successive applications.[8] This patient was a most interesting case as during the treatment of the breast she developed squamous epithelioma of the vulva on which radium had no effect and which eventually killed her. This shows that a patient may have two different growths, one of which is influenced by radium and another which is not.

Malignant stricture of the œsophagus is almost always relieved and swallowing improved, but often the disease is so extensive by the time one sees it that cure is out of the question.

Another kind of relief is the rendering operable of a previously inoperable case, but we can then generally go on with the treatment until the growth disappears. In some cases, however, it will be safer to operate and treat prophylactically with radium, and especially is this the case with carcinoma of the cervix uteri, the selectivity ratio of which is low.

Rodent ulcers, if they can be thoroughly treated, can, I believe, be cured by filtered radium rays in every case. In the small ones I generally use a filter of ½ mm. only of platinum or even silver, thus using for these easily influenced growths a considerable proportion of β rays. The application usually lasts one or two hours, and the growth often disappears after the first treatment, but more usually after the second or third. Then the scar, or rather the site of the growth, must be treated to prevent recurrence. The small amount of scarring left is remarkable.

Squamous epitheliomata vary considerably in their results, their position, microscopical structure, and size being the chief factors. The squamous epitheliomata of the tongue and of the vulva are the very worst forms to treat, while the squamous epithelioma of the œsophagus reacts well, of the pharynx and of the skin fairly well, and that in the cervix, which is of a similar nature, will also sometimes react well. Epithelioma of the tongue is apparently curable at an early stage, such as used to be called pre-cancerous. This is interesting, because it shows that a growth most refractory to radium treatment usually only acquires this character as it advances, and this may explain many of our failures in late cases of other forms. So, probably, is it also possible to deal with remnants left by the surgeon by inserting the tube into the operation wound, and I am certain that this prophylactic treatment should in future become a routine measure, and would prevent many recurrences of every sort of malignant growth.

Epithelioma of the floor of the mouth will sometimes respond, but only to very large doses. Epithelioma of the pharynx has a higher selectivity ratio. Epithelioma of the junction of pharynx and œsophagus is almost always relieved, but seldom cured. These applications used to be very difficult, but the difficulty has been considerably overcome in my latest apparatus. A suggestion of Dr. Hill, too, has removed the difficulty in pharynx cases.

When the disease is lower down the œsophagus we not only get relief, but sometimes total disappearance of the growth.

Epithelioma of the lip is often suitable for treatment. The case mentioned above was operated upon and the glands in the neck removed. A recurrence took place in the neck, but an attempt to remove it surgically failed, and the growth

[8] Pearce Gould: Bradshaw Lecture, 1911.

was left. A few external radium applications removed the induration, and the growth has completely disappeared and remains well, more than a year after the last treatment. The patient, however, has probably secondary growths in the liver. Dominici has a case which is well after three and a half years.

Epithelioma of the penis is, I believe, equally suitable.

I have never had a case of epithelioma of the vocal cords to treat, but it would probably behave more favourably than any of the other squamous growths, and is so slow-growing a disease that the delaying an operation for a month or so by a trial of the treatment could do no harm.

Of squamous epithelioma of the skin I have had three cases; one, a rapidly growing one, was ameliorated but not cured; one was subsequently operated on; and the third I must mention in detail. This patient had a growth on the cheek, 5 cm. in diameter, which had grown to this size in a year. He also had glands in the anterior triangle. The growth had a rather low selectivity ratio, about 1:2 or 1:3, and improved with large doses. The glands increased in size, however, and so the glands in the anterior triangle of the neck were cleared out, and the wound treated prophylactically with radium. The growth in the cheek got nearly well, but the patient died from secondary infection in various parts. So that it is in the slowly growing squamous epitheliomas that good results are obtained, and these cases require large doses, which, from their tendency to ulcerate on the surface, it is often possible to give them.

The spheroidal-celled and columnar-celled carcinomata are a favourable type if the growth is accessible for treatment. Their selectivity ratio is usually higher than the squamous epitheliomata. The glandular carcinomata seen in the palate, antrum, nose, &c., generally react favourably. When inoperable, however, these cases are often hopelessly advanced, such as a case of carcinoma of the upper jaw, which I treated, which was subsequently proved to involve the dura mater. The carcinoma in the lower part of the œsophagus can be ameliorated, but is generally in far too advanced a condition for any cure to be possible.

The application of radium to a carcinoma of the stomach must be an extremely difficult one. It is no good letting the radium lie loose in the stomach—it must be placed right on the growth, and it is difficult to see how this is possible without an operation, as it would be impracticable to retain the radium tube in contact with the growth for any length of time through a direct gastroscope, such patients not being good subjects for prolonged general anæsthesia, and the application would have to last over many hours, or even days.

Treatment of a growth in the intestines above the sigmoid is not usually called for. If inoperable, external application will do no good. One would need to perform a laparotomy and place the radium tube in the mass of growth. The sigmoid can be reached by a long bougie; a sigmoidoscope is a great help for the application, if not an absolute necessity.

The rectum is easily reached and the growths found here are sometimes very suitable to treat. An endeavour must be made to see that the radium tubes are completely surrounded by growth, as then a much bigger dose may be given than when they are in contact with mucous membrane.

Carcinoma of the bladder should be a suitable type of growth for treatment. I have had four cases, but two are too recent to base an opinion on. The others are both relieved, though one has enormous secondary deposits.

Carcinoma of the uterus, too, is one of the very best types of growth to treat. I have only had two such cases. In one the growth completely disappeared, but she had heart disease, and subsequently got a cerebral embolus, which caused her death about five months later. The other improves rapidly.

Carcinoma of the cervix is certainly relieved. An inoperable growth may sometimes be rendered operable, and whether one then recommends operation and prophylactic radium treatment, or radium treatment alone, depends a good deal on the case, and the rapidity with which improvement ensues with the preliminary radium treatment.

Carcinoma of the breast is often a very favourable growth for radium-therapy, but as a rule, when we see them, the recurrences are so deep and extensive that it is better to treat them with the much less selective X rays. We filter the X rays and give massive doses, and as the source of rays is some distance from the skin the actual dose the tumour cells receive is fairly large, and we can often in a thin patient give the deepest parts a quarter or a third of that received by the skin.

Of sarcoma I have insufficient experience, though many forms will be unsuitable for treatment, owing to the rapid and widespread formation of metastases. I have, however, great hopes of localised growths of this class, and especially of lymphosarcoma.

I have no doubt in my mind that with improvements in technique and limitation of the cases treated the results will improve. Further, my figures already show disappearance of the local growth in 12 per cent. of the cases—cases, too, which are incurable by any other means, except perhaps a small proportion by X rays. As I have already stated, my results are better in spheroidal-celled carcinoma than in epithelioma, while I have not treated enough sarcomata to determine where they should come.

Conclusions.

1. That in cases which would otherwise be doomed, complete local disappearance of the growth occurs in 12 per cent., relief of pain or other symptoms in 62 per cent., and no relief in 25 per cent.

2. That these statistics would be improved if cases were excluded which were treated for relief only.

3. That every local inoperable growth of suitable type should be treated with radium.

4. That prophylactic treatment should be used after every operation for cancer.

5. That 10 per cent of successes means 90 per cent. of ultimate failures or partial failures, and that therefore no judgment can be formed in small numbers of cases as to final results.

6. That it is necessary to use large quantities of radium and metal filters at least 1½ mm. thick of lead or platinum. Since I have used 205 mg. of radium in my later cases my results are showing promise of being very much better than when I used only 50 mg.

7. That treatment must be thorough.

Devonshire-place, W.

TORQUAY ISOLATION HOSPITAL.—In the King's Bench Division, London, recently, before Justices Pickford and Lush, sitting as a Divisional Court, the corporation of Torquay appealed from a judgment given at the local county court by Deputy Judge Lush awarding £50 and costs for negligence in the case of a boy who had been an inmate of the Torquay Isolation Hospital. The case was referred to in THE LANCET of May 6th, p. 1233. Judgment was reserved.

ASSOCIATION OF MEDICAL OFFICERS OF HEALTH.—A council meeting of this association was held at the Holborn Restaurant on May 12th. Dr. Rashell T. Davison, President of the association, occupied the chair, supported by the secretary, Mr. D. A. Belilios, and other members of the council. The treasurer reported a balance in hand of £28, including outstanding subscriptions. It was decided to remind members that since an arrangement had been arrived at with the editor of the *Medical Officer* whereby members were afforded the privilege of obtaining this journal at a reduced subscription, together with a quarterly supplement devoted to the interests of part-time medical officers of health, it became necessary that the small annual subscription of 5*s.* a year should be paid as promptly as possible. The secretary reported that the membership stood at 253. Dr. A. Butler Harris was appointed editor of the quarterly supplement. The consideration of the letter from the Council of the British Medical Association with reference to Minute 234, Annual Representative Meeting, Belfast, 1909, was postponed until the next monthly meeting of the council on June 2nd. A letter from Mr. George Jackson of Plymouth was read, in which he expressed the opinion that part-time men were very necessary in country districts, working under the county medical officers of health.

DIFFUSE LIPOMA AND ANIMALS:

PUBIC LIPOMATA IN MAN, AND NUCHAL LIPOMATA IN MAN AND ANIMALS.

BY SIR JONATHAN HUTCHINSON, F.R.C.S ENG., F R.S.,
CONSULTING SURGEON TO THE LONDON HOSPITAL, HOSPITAL FOR DISEASES OF THE SKIN, BLACKFRIARS, ETC.

THE publication in THE LANCET of my paper describing a case of huge accumulation of fat on the pubes[1] has been the means of bringing me the narrative of another example of the same thing. So far as I am aware, these two are the first that have been yet described, but as they are exactly alike we may consider that they substantiate the statement that the well-known nuchal lipomata have their representatives in the pubic region. It is not improbable that there are not a few examples of them, as for the most part they are easily concealed and patients will not be inclined to disclose them.

Donkey with nuchal lipoma. The mane is seen to be dragged down to the left by a large growth of fat about its roots. The animal was a well-fed gelding of middle age. The lipoma had been growing for two or three years (*from an original photograph*).

In my case the fat masses were so large (see the illustration in the previous paper) that they completely concealed the penis and greatly interfered with both its functions. In the second case my informant states that the condition was very inconvenient in micturition. Both of the patients had large accumulations of fat on the nape of the neck—the ordinary and well-known diffuse lipoma peculiar to that region. We may, I think, consider the point established that the fat which undergoes hypertrophy is that which is normally present around the roots of the large sexual hairs in the regions named.

In the human subject no very conspicuous hairs are present in the back of the neck, but the region is that on which in the lower animals mane is produced, and it will be remembered that I have shown that in the case of asses these fat growths are met with in that position. I now introduce an illustration of one of them which was accidentally omitted in my former paper. Although the hairs of the mane have been for the most part suppressed in the human subject, we may suppose that the subcutaneous fat still retains its proclivity to growth. In a few individuals some slight representation of a mane is actually present in men. I do not doubt that these nuchal lipomata in asses are fairly common and need only to be looked for. They offer an interesting opportunity for observing the effect of diet, beer, &c. Do they ever occur in females? In what other animals are they met with?

The case to which I have referred has been communicated to me by Dr. Horace Colman of Broughty Ferry, who has kindly added to my obligation by supplying the following particulars. The patient was a man aged 55 when Dr. Colman first saw him. He was the subject of phthisis, but was still somewhat fat. Subsequently the general body-fat entirely disappeared, and he died from phthisis, very much wasted, about two years later. He had been in the habit of drinking whisky very freely. The special fatty masses which were the interesting feature in his case diminished much as his emaciation progressed, and became more conspicuous from the disappearance of the body-fat. They were, however, in reality much smaller. Those on the nape of the neck were of enormous size; and the others were, as Dr. Colman states, exactly like those figured in my previous paper in THE LANCET, and entailed similar inconveniences. The course of the phthisis occupied three years, but the end was hastened by two attacks of cerebral hæmorrhage. Dr. Byrom Bramwell had seen the patient in consultation.

The Polyclinic, Chenies-street, W.C.

[1] THE LANCET, March 25th, 1911, p. 800.

A CASE OF THROMBOSIS OF THE SUPERIOR VENA CAVA AND GREAT VEINS.

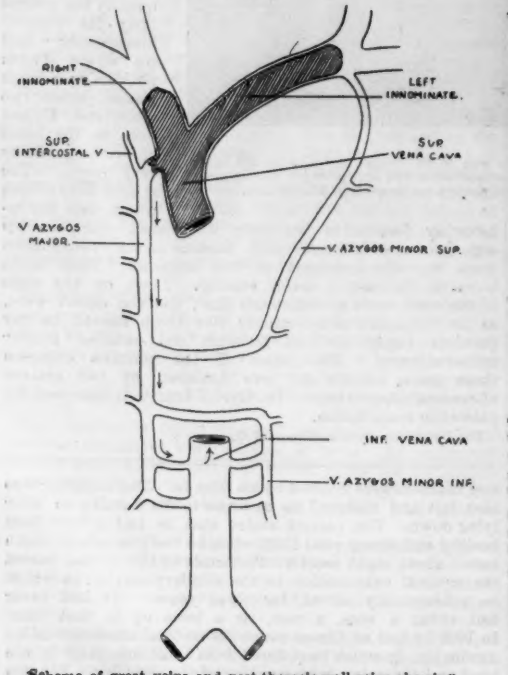
BY F. C. DAVIES, B.A. CAMB., M.R.C.S. ENG., L.R.C.P. LOND.,
LATE HOUSE PHYSICIAN AND HOUSE SURGEON, CHARING CROSS HOSPITAL.

THE patient, a man, aged 25 years, was admitted to Charing Cross Hospital in November, 1909, under the care of Dr. F. W. Mott, complaining that for about 11 months he had suffered from throbbing pains and swelling of the head and neck. The swelling of the neck had increased so that a 16½-inch collar was now too tight, whereas before he had worn a 15-inch one. He had been subject to paroxysmal attacks of suffocation, with straining cough and retching, which used to come on at night-time, waking him from sleep. He used to sleep alone and could not say how long the attacks lasted, but thought that he had had about eight or nine attacks during this time. They would pass off and leave him almost collapsed. He could associate them with no causative factor. During this time the swelling of the face and blueness were noticed by his friends. The condition was also felt and observed to be worse in the morning or after lying down. The patient stated that he had always been healthy and strong until 1906, when he had gonorrhœa, which lasted about eight weeks. Previously to this he had passed the medical examination to the artillery service, in which he subsequently served for three years. He had never had either a sore, a rash, or a bubo up to that time. In 1908 he had an illness which his medical attendant called meningitis, in which he suffered from throbbing pains in the head and the spine, with swelling of the right leg. For this he was sent to the infirmary, where he remained for six weeks. The medical officer at the infirmary did not agree with the previous diagnosis. (I have not been able to find any record of his case in the neighbouring infirmaries.) In June, 1909, the patient saw a medical man for the present symptoms, and this practitioner advised attendance at the London Hospital. Through the courtesy of Dr. Lewis A Smith and Dr. C. E. Zundel I am able to give the exact condition in which he presented himself there. He gave his history much as given above and denied syphilis. He appeared puffy about the face and neck with prominent veins on his forehead. There was a pustulo-papular eruption on the chest, the arms, and the face; also distended veins were to be seen

on the front and margins of the chest, which became more marked when lying flat. There was some ulceration of the anterior pillar of the fauces on the right side. There was no displacement of the heart and the sounds were clear. No definite dulness could be made out beneath the sternum. Aphonia was present when the congestion was great. A tentative diagnosis of mediastinal gumma was made and the patient was treated with mercury inunctions and potassium iodide for six weeks with no definite result. He was then placed on X ray treatment (30 ampères through four thicknesses of lint) three times a week for four weeks, at the end of which time he left off attending the hospital. He subsequently stated that he was practically "cured" at the end of this course. It should be mentioned here that all this time he was continuing with the mercury and potassium iodide. For two months after this he said that he was very much better, but for the last four weeks he had been getting steadily worse and a constant, dry, irritating cough had developed.

Condition on admission to hospital.—There was nothing of importance in the family history. The patient was physically a well-built man; the face and neck were swollen and dusky in appearance, the veins on the forehead and sides of the neck stood out, especially the external jugulars. The eyes were suffused and the conjunctivæ were injected. On the front of the thorax distended veins were seen, several ramified patches being especially obvious along the margin of the thorax and about the xiphisternum. The veins in both arms were obviously dilated and the congestion appeared to be symmetrical. Breathing whilst sitting up was comparatively easy, but became very embarrassed on

FIG. 1.



Scheme of great veins and post-thoracic wall veins showing thrombosed veins (shaded) and probable course of blood return, by means of azygos veins on both sides fed by intercostals and thence into inferior vena cava.

lying down. The chest moved well. On percussion some dulness was made out to the right of the sternum in the first and second spaces. No other physical signs were made out in the lungs. The heart showed but little displacement of the apex beat, but there were signs of right-sided dilation. The sounds were clear and no murmur was detected. The pulse was synchronous on the two sides; it was occasionally intermittent and of the usual frequency. The liver dulness extended to two inches below the costal margin and to the fifth space above in the nipple line. The patient had a right-sided inguinal hernia. Laryngeal examination showed injection of the mucous membrane of the pharynx and larynx, but no paralysis of the vocal cords was observed. The thorax was screened and a radiogram was taken by Dr. W. Ironside Bruce without at the time furthering the diagnosis. This plate, however, was a particularly good one, and examined subsequently in the light of post-mortem revelations showed a definite increase in the normal medium opacity to the right of the sternum at the level of the first intercostal space.

FIG. 2.

Four days after admission ascites began to develop, with œdema of the abdominal wall and back. This was associated with further evidence of cardiac failure. A second radiogram was now taken, and this supporting clinical evidence of pleural effusion an aspirating needle was put into the chest. This procedure, however, initiated one of the paroxysms of straining, coughing, and retching, accompanied by such a degree of collapse that the patient very nearly died. With the exception of the development of an acute ischio-rectal abscess, which was opened and drained effectively, the patient's condition became steadily worse, the signs of heart failure increased, and death intervened on Dec. 17th, three weeks after admission. The temperature was normal while the patient was in the hospital, except during the development of the acute abscess.

Post-mortem examination of the hardened specimen of great vessels and root of the right lung.—The superior vena cava from its origin to within half an inch below the entrance of the vena azygos major was represented by a thick fibrous cord. At this point a partial lumen existed which extended to its termination. The lumen was seen to be triangular on section, the wall being represented by a firm laminated coat deeply impressed to the left by the adjacent ascending part of the aortic arch. The vena azygos major was patent up to the point at which the superior intercostal vein entered on that side. Up to this point the vein was large but otherwise unaffected. Beyond this, as the vein passed above the root of the right lung, it

was represented by a firm, hard, fibrous cord blending with that which represented the superior vena cava at this point. Proximally to this thrombotic portion—i.e., between it and the point of entrance of the superior intercostal vein—the cusps of the valve of the vena azygos were to be seen filled with blood-clot of recent formation. From the level of the bifurcation of the innominate artery the lumen of the right innominate vein began to diminish until half an inch lower down the vein was entirely occluded and only a fibrous cord remained to its termination. Similarly the left innominate vein, which was patent to the point at which it received the left superior intercostal, crossed the root of the great vessels as a thick fibrous cord. In the connective tissue above the transverse part of the left innominate vein were numerous distended smaller veins which formed quite a network, and it may be that the inferior thyroids had passed forwards to anastomose with the veins of the anterior thoracic wall. The morbid condition appeared for the most part to be confined to the walls of the vessels affected and their immediate neighbourhood. Full details of the necropsy will not be given, but it is necessary to mention that the heart showed right-sided dilatation and tricuspid incompetence; the usual consequences of right heart dilatation and cardiac failure existed in the organs and tissues of the body.

Microscopic examination.—Sections of the specimen were cut, stained, and mounted at the Pathological Laboratory, Claybury, and photo-micrographs were made by Mr. Geary to illustrate the morbid histological changes. A section, transverse to the thromboid part of the superior vena cava, showed the dense fibrous thrombus surrounded by a very much thickened and infiltrated vein wall. (Fig. 2.) A section of the right innominate vein above its thrombosed part showed

FIG. 3.

similarly a very much thickened wall, with, in parts, sma'l-celled infiltration [and elsewhere fibrous infiltration, though not to the same extent as the section shown in Fig. 2. A longitudinal section of the thrombus in the right innominate, including the termination of the clot, showed a certain amount of periphlebitis; but it also exhibited an endarteritis of one of the vasa vasorum. (Fig. 3.) Further sections were cut and examined of other parts of the thrombosed vessels. Staining for micro-organisms yielded negative results.

Taking into consideration all the facts of the case, including especially the histological examination, it seems probable that the condition originated as a localised gummatous periphlebitis resulting in a spreading thrombosis of the superior cava and innominate veins. Moreover, it is probable that the anti-syphilitic treatment employed cleared up the greater part of the gummatous infiltration, leaving untouched the fibrous tissue within the occluded vessels. The complex of symptoms was due to the thrombosis of the veins occasioned by the gummatous infiltration around. Anti-syphilitic remedies could not remove the thrombus, and therefore the symptoms continued and the right heart dilatation progressed, eventually leading to a fatal termination.

I have here to thank Dr. F. W. Mott, F.R.S., for his permission to publish the notes of this case.

Alexandra-avenue, S.W.

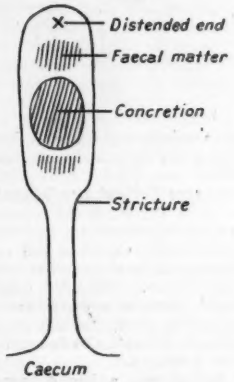
OUR INABILITY TO DIAGNOSE GROSS LESIONS OF THE APPENDIX.[1]

BY EDRED M. CORNER, M.C. CANTAB., F.R.C.S. ENG.,
SURGEON TO OUT-PATIENTS AND THE ISOLATION WARDS OF, AND LECTURER AT, ST. THOMAS'S HOSPITAL; SURGEON TO THE CHILDREN'S HOSPITAL, GREAT ORMOND-STREET, LONDON, ETC.

IT should be a first principle of clinical work to ascertain and co-relate the agreements and differences found between bedside inferences and what is found at operation or necropsy. This is a principle often practised, and yet strangely enough often done so imperfectly as practically not to be done at all. Let us take, for instance, a common case such as every medical man must meet—say a case of appendicitis. We have learned through examining the relationship between the clinical history and the pathological findings that we cannot diagnose appendicitis, even when there are gross lesions obvious to the naked eye. In fact, it is found that we cannot diagnose the slower, if milder, forms of appendicitis. Yet the significance of those slower and milder forms of appendix mischief is beginning to be realised. In illustration of our disability to appreciate these varieties of appendicitis I will quote three cases—one under the care of Mr. R. H. W. Garle of Purley, one under that of Dr. Z. Mennell of Hyde Park-terrace, and one in the practice of Mr. R. A. L. Hill of Wimbledon.

CASE 1.—A man, about 35 years of age, had abdominal discomfort for some time. It came on insidiously and slowly so that the patient could give no definite date of the

FIG. 1.



onset. The trouble affected his mind, making him nervous and depressed. He was "off his sleep." He had no

[1] A portion of an address delivered to the Clinical Society of Manchester, January, 1911.

appetite or desire for food and the action of the bowels was irregular. All these symptoms could well have been the result of neurasthenia after a fall which he had sustained. But having travelled in America and having decided that his abdominal discomfort arose in his right iliac fossa, the patient consulted many medical men. All told him that they could find no reason why his appendix should be removed except one general practitioner, who aspired to remove his appendix at any cost. Still the patient was so confident in his own opinion that he was not shaken by the adverse opinions of those who, having been specially trained, should know. He insisted on having his appendix removed whether it was diseased or not. This operation was done, and to the surprise of all concerned a very adherent appendix was removed showing the following pathological points: (1) Thickening of its walls; (2) distension of its terminal part; (3) fæcal matter and a concretion; (4) a stricture towards the cæcal end; and (5) many adhesions (see Fig. 1).

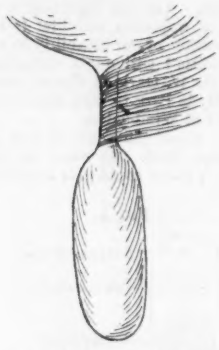
There is no need to go into the clinical details of the case, but it must suffice to add that the adhesions were so numerous and vascular that the wound had to be opened and blood evacuated from the peritoneal cavity, which was drained on about the sixth day after operation.

Of this case it may be said that in a patient who had had no clinically recognisable attack of appendicitis was found a grossly diseased appendix, so grossly diseased as to have caused extensive changes in its surroundings.

CASE 2.—This case was that of a boy, the only remaining son, whose brother had died from appendicitis and peritonitis, and whose father had had his appendix removed by Sir Frederick Treves. This boy had had one or two attacks of colicky pain of brief duration in the abdomen. His parents, being nervous, and the boy having taken to a life of exposure and irregular meals, insisted on having his appendix removed.

The operation was easy, there being practically no adhesions to be separated. But the distal two-thirds of the appendix was enormously distended with cloudy mucoid material due to the omentum being adherent and wrapped tightly round its cæcal end, as in Fig. 2, producing what may be called an extrinsic stricture.

FIG. 2.



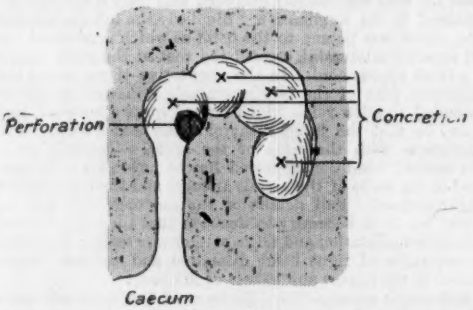
As in the former case, here was a grossly diseased appendix found in a patient who had never had a clinically recognisable attack of appendicitis.

These two examples are the best two, but not the only two, I have met with of gross disease in the appendix which was removed in spite of the fact that there had been no recognisable attack of appendicitis. Of these two cases it may be said that fortune in the shape of operation saved them from certain trouble in the future. The third case I am to quote illustrates that a fatal attack of appendicitis followed on the period of unrecognised appendicitis, the patient dying, not having previously the good fortune to demand operation, the parents losing their first-born.

CASE 3.—The patient was a boy 4½ years of age, to whom his parents were devoted, and who protested that he had never had an attack of appendicitis previously, though he had had unexplained abdominal pain.

At the operation, on account of its situation behind the cæcum and adhesions the appendix was difficult to find. It was when delivered found to have the following characteristics: (1) Thickened walls; (2) stiff walls; (3) the shape of a bishop's crozier; (4) a moniliform appearance of alternate distension and contraction due to the presence of *four* concretions; and (5) there was a perforation over the proximal concretion (see Fig. 3). The boy died a week from the operation.

FIG. 3.



The disease found in the appendix obviously antedated the onset of the fatal attack, and the feeling is irresistible that if only means could be discovered of recognising such conditions this boy's life, and many other lives, could be saved. The means at our disposal are these: 1. Take particular notice of abdominal pain in children, particularly when associated with discomfort in the right iliac fossa or without any ascertainable cause. 2. In people of 35 years of age onward, take particular notice of abdominal discomforts associated with general depression of health; as at that age the resisting power of the appendix—e.g., its lymphoid tissue, may be becoming inadequate for its needs. 3. Remember that the operation of appendicectomy in a quiet interval is absolutely safe, is easy, takes a short time, in modern surgery is without the risk of hernia, requires no abdominal belt to be worn after operation, and requires three weeks or less of convalescence.

It only needs mention to remind us that diseases of the appendix as gross as carcinoma of the appendix are never diagnosed apart from infective appendicitis. It seems certain that a physiologically inadequate appendix is responsible for much ill health after 35 or 40 years of age.

In view of such cases as those of undiagnosable and unrecognisable appendicitis, it cannot be urged that appendicectomy is done too frequently. Rather would it seem that it can hardly be too frequently performed.

Harley-street, W.

A CASE OF OVARIAN CYST IN A NYASALAND WOMAN.

BY HUGH S. STANNUS, M.B. LOND., M.R.C.S. ENG.,
MEDICAL OFFICER, NYASALAND ADMINISTRATION.

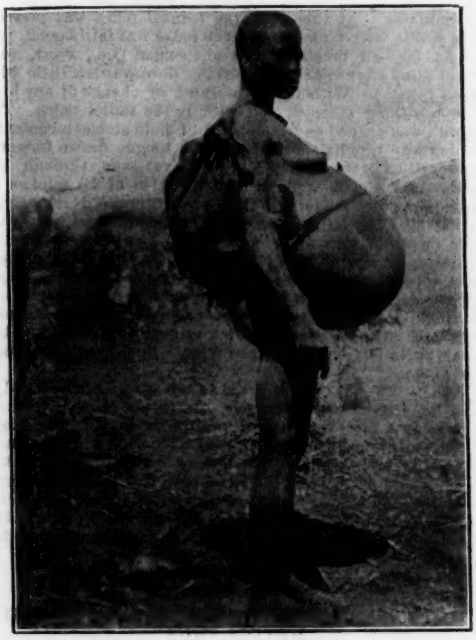
WHILE travelling in the northern districts of this protectorate my attention was drawn by one of my servants to a native woman in the village in which I had camped who had a very considerable enlargement of the abdomen. The woman, to my surprise, allowed me to examine the abdomen, and from the history she gave me there was little doubt that the abdominal tumour was an ovarian cyst, and, as nothing but a fatal termination could be expected if left untreated, I suggested to her that she should go to a mission station two days' journey distant to see whether anything could be done for her. She immediately fell in with the idea, and started off on the following day, carrying her last-born on her back, as is the custom, covering the distance in good time. Thither I followed her, and with Dr. W. Y. Turner, of the Livingstonia Mission, to whom I am indebted for many of the notes of the case, the removal of the tumour was undertaken, chloroform being administered by a native dresser.

The illustration, from a photograph taken on Oct. 12th, 1910, on the eve of her journey, shows her standing with her 1½-year old child strapped on her back.

The patient, a native woman of the Henga, aged 25 years,

had first noticed a small swelling after the birth of the last child but one, which, however, soon afterwards disappeared. The last child was born in April, 1908, and the swelling was again noticed after the birth. Both pregnancies and confinements had been normal. The last child was rather small when born, 18 months ago, and was still being suckled; menstruation had not recommenced. The tumour was stated by the patient to have been first obvious in the right hypochondriac region and the growth to have occurred in a downward direction. Except for a certain degree of discomfort due to the weight of the growth and to shortness of breath there was little to complain of on the part of the patient; there had never been any trouble with the bowels or the bladder.

Examination revealed the presence of a tumour apparently springing from the lower part of the abdomen with a convex outline above and to either side. It was rather more prominent on the right half of the abdomen than on the left, and presented a constriction at a level a little below



the umbilicus. Except in the left lumbar region, where a more solid mass could be felt, the tumour was semi-elastic and showed a well-marked percussion thrill, which was interrupted at the line of constriction. The abdomen was dull to percussion all over, except in the extreme flanks and epigastric notch, and stomach resonance was obtained in the left hypochondrium. The lower ribs were everted to a considerable extent, and the umbilical scar was much stretched; there was compression of the bases of the lungs, with collapse and some œdema. The patient suffered from intermittent cough, and anæmia was obvious.

The measurements were as follows:—While lying down the greatest girth three and a quarter inches above the umbilicus was 44 in.; at the umbilicus 41½ in.; sternum to pubes, 24 in. Per vaginam the uterus was anteflexed and lying to the right, crowded down by pressure from above.

Operation.—A median incision was made between the pubes and the umbilicus, and was afterwards extended to 3 in. above the umbilicus, in all 12 in. A multilocular ovarian cyst was discovered springing from the right ovary. The mass consisted of three very large cysts and two smaller ones, with innumerable lesser ones. The five larger cysts were successively tapped and the openings then clamped. The upper surface of the mass was then found to be the seat of fairly tough adhesions to the great omentum, to the abdominal wall, and to the gut; these were so difficult to deal with that the pedicle was tied by two intertwined ligatures and divided and the mass removed from below upwards. Slipping of these ligatures caused momentary hæmorrhage, after which the vessels were tied off separately. The adhesions were dealt with systematically, the omentum was tied off in sections, and hot water served to stop general oozing from bleeding surfaces.

A considerable degree of collapse supervened during the last manipulations, necessitating haste during the late stages of the operation. An injection of strychnine was given and a pint of warm saline solution was poured into the abdominal cavity, the incision being closed with continuous catgut sutures for the peritoneum and interrupted silkworm gut sutures for the other coats. The umbilicus and a portion of redundant skin were excised. Convalescence was good, but a little slow owing to anæmia and an evening rise of temperature to from 99·2° to 102·2° F., which persisted for two weeks.

The wound healed by first intention, and a year later the woman was in excellent health, the abdominal parietes having retracted with no points of weakness; no hernia.

The part removed consisted of a multilocular cystic ovary. As before mentioned, there were five large cysts and a mass of smaller ones. The larger ones contained an opaque dark-brown liquid with partly decolourised branching, coral-like blood-clots; the smaller ones contained clear yellow liquid. The liquid contents collected measured 33 pints and the weight of the whole tumour was 44½ lb.

Zomba, Nyasaland.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF IRREDUCIBLE HERNIA AND PERFORATION OF THE DUODENUM.

BY R. W. MURRAY, F.R.C.S. ENG.,
SURGEON TO THE DAVID LEWIS NORTHERN HOSPITAL, LIVERPOOL.

I WISH to record the following case because the combination of circumstances was very unusual and unfortunately led to an error in diagnosis which must have materially lessened the slender chance the patient had of recovering.

On Jan. 1st of this year a man, 30 years of age, was admitted to the Northern Hospital, Liverpool, under my care on account of an acute abdominal condition associated with a hernia. He was a man of good physique, but had worn a truss for some years on account of a right inguinal hernia. On several occasions the rupture had come down and he had had difficulty in reducing it. About 3 o'clock in the afternoon of the last day of the old year the bowel passed the truss and he could not get it back. He did not suffer much inconvenience until the evening, when the hernia became decidedly uncomfortable, and he again tried hard to get the bowel back; he was then seized with pain in the abdomen which increased in severity and the poor fellow passed the night in agony. In the morning a medical man was sent for, who saw the patient at about 11 o'clock and found him to be suffering greatly from pain, more especially over the lower abdomen, which was extremely tender. An attempt was made gently to reduce the hernia, but the manipulations were painful and not satisfactory and therefore arrangements were made for the case to be admitted to hospital.

On admission, at 3.30 o'clock in the afternoon of New Year's Day, the patient had the anxious look and pallor associated with a sudden and grave abdominal crisis. The pulse was hardly perceptible, and was 135 to the minute; the temperature was 98° F. The patient's mind was quite clear, and he gave me a full account of his present trouble. This was the first illness he had ever suffered from, and his great desire was, at any cost, to be relieved of the acute abdominal pain. He lay in bed with his knees drawn up, the abdomen being slightly distended, extremely tender, and the breathing entirely thoracic. The right side of the scrotum was swollen and a little discoloured, probably the result of his efforts to reduce the bowel. It was obvious that some abdominal catastrophe had occurred, almost certainly in connexion with

the hernia, and most probably due either to reduction *en masse* or to rupture of the bowel. I favoured the latter view on account of the great pain, collapse, and extreme tenderness over the lower abdomen. I did not attempt much in the way of physical examination, for it was clear that the only chance lay in immediate operation.

The patient being under ether anæsthesia I made an incision over the inguinal canal, divided the external abdominal ring, and exposed a hernia sac which occupied the usual position. On the sac being opened a quantity of gas and fluid of a greyish-green colour gushed out from amongst coils of small intestine. The bubbles of gas escaped with a noise and the fluid continued to flow. It was thus obvious that the intestine had perforated, but as the escaping fluid was not offensive and was of a greenish colour, and the coils of small intestine which had been imprisoned in the sac, though inflamed, showed no signs of strangulation, I at once realised that I had made a mistake, and that the hernia had nothing whatever to do with the state of affairs, which was almost certainly due to a perforation of the duodenum. I reduced the intestines against the escaping fluid, covered the wound with a large gauze pad, and opened the abdomen to the right of the middle line from above to a little below the level of the umbilicus. A great quantity of green-coloured fluid poured out, together with bubbles of gas. After baling out several pints of this fluid I was able to locate the stomach, and on pulling it out of the wound was able to see, and to demonstrate to others, a perforation about half an inch long and a quarter of an inch broad on the anterior surface of the first part of the duodenum. I closed the hole with several silk sutures. It was at times difficult to see what I was doing, because in spite of constant mopping the fluid collected again so rapidly as completely to cover the field of operation. The fluid which re-accumulated and so embarrassed us came from other parts of the abdominal cavity, for it was interesting to notice that none escaped through the hole in the duodenum. I made no further attempt to get rid of the fluid which still remained, and closed completely the abdominal and inguinal incisions. During this time Mr. E. S. Miller, my house surgeon, exposed and injected into the basilic vein a pint and a half of saline solution together with some adrenalin.

At the close of the operation the condition of the patient was very bad indeed, though not absolutely hopeless, for his response to the saline injection encouraged us. However, though he regained consciousness he never thoroughly rallied, and died ten hours later.

I believe it was Sir William Gowers who said, "It is easy to be wise after the event, but difficult to be wiser." That expresses my present position. As the man told his story I concluded that something had gone wrong with his hernia, and when I saw the rigid abdomen and the full and discoloured scrotum, both of which were extremely tender, my diagnosis appeared justified. Had I suspected perforation of the duodenum I might have obtained from the patient sufficient evidence to make a correct diagnosis, but my mind was fixed on the hernia trouble, for everything seemed to point so clearly in that direction. If I had to deal with a similar combination of circumstances I would most probably act in the same way, which perhaps is the wise way, but still there is a wiser way.

Liverpool.

DEATH UNDER AN ANÆSTHETIC (C_2E_2).

BY D. J. MUNRO, M.B., B.S. LOND., &c.,
ANÆSTHETIST TO METROPOLITAN EAR AND LONDON THROAT HOSPITALS.

THE patient was a man, aged 68, who had suffered for about 30 hours from acute abdominal symptoms, correctly diagnosed by his medical attendant as intestinal obstruction. His temperature soon after the onset was 101° F., but it fell in 24 hours to 98°, while his pulse-rate rose to 124. He did not vomit, but was enormously distended, so that his rapid laboured breathing was accomplished by forcible movements of the upper part of the thorax only. He was slightly cyanosed and the heart sounds were weak. He was a short man but very bulky. The use of spinal analgesia being contra-indicated by the height of the meteorismic paralysis, it remained to select an inhalation method, and since his dyspnœa put ether entirely out of court, while the heart's action seemed too weak for chloroform, the administration of C.E. mixture (C_2E_2) was begun. Lavage of the stomach was discussed and negatived (since he had not been sick), because his condition was so bad that its depressing effect was feared. The anæsthetic was given from a fine-nozzled graduated drop-bottle on a flannel Tyrrell's mask. After 10 minutes, during which time 2 drachms were used, the operation was begun. Pupils medium-sized, and light and lid reflexes present. It required a search of some 15 minutes amongst engorged, distended intestines and fat-loaded omentum to find and deal with the constricting band. During this period the flannel mask was replaced by MacCardie's inhaler in order to leave one hand free for emergencies. Owing to the temperature of the theatre, which was above 70°, it was necessary to recharge the sponge rather frequently, but the additions never exceeded one drachm at a time, and the inhaler was not closely applied. Another five minutes were expended in exploring the abdomen for other lesions, and then the stitches were introduced, the anæsthetic being stopped when a counter-incision for drainage was made. Altogether 1½ ounces of C E mixture were used in just over 30 minutes. At this point the corneal reflex was present, the pupils were "pin-point," the pulse was fairly good, rate about 80, and breathing was unchanged (i.e., short, with inspiratory stertor, and chin jerking downwards a little with each breath). Without any warning or change of any kind the breathing stopped, and with it the radial pulse. The mouth was opened and found full of fluid stomach-contents, which was rapidly sponged out, the tongue drawn forward, and artificial respiration and heart massage through the abdominal wound applied. An injection of 10 minims of adrenalin was made into the pericardium. No response being made by either respiratory centre or heart, resuscitative measures were abandoned after 20 minutes, when the intra-ocular tension was found to have fallen. Tracheotomy was not performed (a needless mutilation) because the finger encountered no foreign body in the larynx, and because not a single respiratory movement came in response to any measure. The gastric contents continued to well up into the pharynx in large quantity, and a large liquid motion passed per anum.

The case was at once reported to the coroner, who decided that no inquiry was necessary. It seems certain, in view of the two facts—(1) active peristalsis in both directions supervening on liberation of the constricted bowel, and (2) extremely restricted respiratory movements—that the result would have been the same even had the patient been conscious and able to cough. The entrance of even a little vomited matter into the trachea was enough to supply the little extra strain which the embarrassed and probably fatty heart was unable to bear.

London, S.W.

A CASE OF LYMPHADENOMA TERMINATING WITH MENINGISMUS.

BY G. R. STRONG, M.B., B.S. LOND.,
HOUSE SURGEON (LATE HOUSE PHYSICIAN), WESTMINSTER HOSPITAL.

THE patient, a boy aged 9, was sent to the Westminster Hospital on May 28th, 1910, by Dr. A. J. Ambrose of Clapham Common, with a diagnosis of lymphadenoma and acute meningitis, and was admitted under Dr. R. G. Hebb.

The following history was obtained from the father. In 1906 a large swelling appeared suddenly in the left side of the neck; after a time it subsided to some extent, but early in 1907 it began to enlarge and to extend. In February, 1907, the glands were removed at another hospital from the left side of the neck and were thought to be tuberculous. About six months later they recurred in both sides of the neck and in the axillæ; they disappeared entirely for a short time on three occasions. Three months before admission the boy had an attack of vomiting; he was then "strange in his behaviour," but in what respect could not be discovered. Two days before admission he awoke in the morning "strange and vacant," but was able to dress himself. During the morning he became deaf and could not articulate clearly. At tea-time he ate ravenously, and shortly afterwards he began gradually to become unconscious. He was attended by Dr. Ambrose.

The patient's state on admission was briefly as follows. He was a well-nourished child; his face was flushed, his

pupils dilated, and he had long eyelashes. He was frequently seized with tonic spasms, involving the neck, trunk, and limbs, during which he assumed the position of opisthotonos. He uttered the typical "meningitic" cry at intervals of about half a minute. The temperature was 98° F. and the pulse-rate 146 per minute. Enlarged glands, discrete and moderately hard, could be felt in both sides of the neck and in the axillæ. Just below the left costal cartilage there was a palpable tumour, moving with respiration, giving the impression of an enlarged spleen with an irregular surface. No abnormal signs were discovered in the heart or lungs.

It thus appeared fairly obvious that the case was one of lymphadenoma with acute meningitis. One of my colleagues, who saw the child carried through the hall, said to me, "Whose is that case of meningitis that has just come in?"

Numerous attempts were immediately made to draw off some cerebro-spinal fluid. At the first puncture two or three drops of clear fluid, which might have been either cerebro-spinal fluid or water from the syringe, were observed, but were at once lost in the blood which followed. After this nothing but blood passed through the needle, and it was thought that the canal had probably not been reached. The procedure was exceedingly difficult owing to the almost continuous violent spasms. The patient was fed with milk, and potassium bromide and chloral were administered every four hours as long as swallowing was possible. At 11 P.M. the temperature was 100·6°. On the morning of May 29th the cry had ceased; the convulsions were replaced by marked twitching of the face and arms. At 3 A.M. the temperature was 102·8°, and the patient could no longer swallow. At 11 A.M. the temperature was 100·4°, the pulse was too rapid to be counted, the breathing was stertorous, and the eyes had a "ground-glass" appearance. At 7 P.M. the temperature had risen to 105·2°, death occurring at 10.40 P.M. The temperature was on every occasion taken in the axilla.

Necropsy: Abstract of Dr. HEBB'S *notes.*—The spleen was enlarged, of an irregular surface, tough on section, and showed typical "hardbake condition"; the white areas, however, tended to be small and discrete, not large and confluent. The mesenteric, aortic, and left iliac glands were all enlarged and softish on section. The axillary glands were very firm on section, and much engorged compared with the glands elsewhere, which were white. The kidneys and liver were normal, showing no deposits. The heart and lungs were normal. The brain was markedly hyperæmic; there were marked œdema of the meninges and excess of fluid, but the ventricles were not enlarged. The grey matter was injected; there were no deposits. Death occurred from toxinæmia.

It will be seen that this patient on the day before admission presented all the symptoms of acute meningitis, and in spite of the failure to obtain cerebro-spinal fluid I confidently expected that a condition of meningitis would be revealed at the post-mortem examination. In Allbutt and Rolleston's Medicine[1] the following sentence occurs: "In some cases delirium and coma have occurred. One of Mosler's patients died from œdema of the brain." Upon referring to the article in question[2] I found that Mosler said: "The patient died from œdema of the brain, probably from a cerebral hæmorrhage." I can find no mention of any other case of the kind in any of the standard works on medicine, and as far as I am able to ascertain no case quite like the above has been recorded. My thanks are due to Dr. Hebb for permission to publish this case.

[1] Allbutt and Rolleston's System of Medicine: Art., Lymphadenoma.
[2] Von Ziemssen's Cyclopædia of Medicine (English translation), vol. viii., p. 476.

THE ROYAL SANITARY INSTITUTE.—Under the auspices of the Royal Sanitary Institute a discussion on "Ventilation in Theory and Practice" will take place in the Royal Albert Memorial, University College, Exeter, on Friday, June 2nd, at 7.30 P.M. Mr. H. P. Boulnois, M.Inst.C.E., will preside, and a general discussion will be opened by Mr. J. Jerman, F.R.I.B.A. On the following day (Saturday) visits will be made to the sewage disposal works, and also to the corporation waterworks at Pynes. Members will lunch together at the Royal Clarence Hotel, Exeter. Further particulars, which should be applied for not later than May 29th, can be obtained from the City Engineer, Municipal Offices, Exeter, or from the Secretary of the Institute, Buckingham Palace road, London, S.W.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SURGICAL SECTION.

Cleft Palate.

A MEETING of this section was held on May 9th, Mr. RICKMAN J. GODLEE, the President, being in the chair.

Mr. W. ARBUTHNOT LANE read a paper on Cleft Palate and its Treatment. He said that when he was working in the dissecting-room on the factors that determined the changes in the form of the skeleton consequent on a specialisation of the functions of the individual, he was particularly interested in the study of the forces that determined the development of the bones of the face. That led him into serious conflict with many of those gentlemen who devoted themselves to the study of diseases of the throat and nose, especially in regard to the causation and treatment of adenoids. That arose through the demonstration of the mechanical influence exerted by the free passage of air through the naso-pharynx and its effect on the development of the bones surrounding that cavity. After much controversy of a more or less acrimonious nature on their part those gentlemen absorbed the principles involved into their treatment, and breathing exercises had even become a portion of the routine of the education of the board school child. He merely referred to that as the factors which affected the development of the naso-pharynx had an important bearing on the principles involved in the treatment of cleft palate. He recognised that during the persistence of such a degree of cleft of the palate as entailed the absence of the pressure normally exerted by the air in its passage through the naso-pharynx the factors that determined the normal development of the naso-pharynx and surrounding bones were in abeyance, and that those structures did not respond as they should to normal evolutionary factors. At the time he first devoted his attention to the study of cleft palate and of its treatment there was, as far as he could learn, no difference of opinion among surgeons all over the world as to its treatment. The cleft in the infant was deemed inoperable, and while it was not considered wise to operate under three years of age, the time of election was between four and six years. What struck him as extraordinary at that time were two facts. The most conspicuous was that surgeons were satisfied to operate on but a very small proportion of the cases of bad cleft palate since only a fraction of the number of such cases survived to the age at which the operation they recommended was performed—namely, four to six years. They did not seem to realise that the closing of the cleft in the hard palate was an operation of urgency in severe cases and that it was a condition that called for immediate interference in order to save the life of the child. He was also impressed by the fact that the operations which they performed with so little success at the so-called period of election with instruments that amazed one by their clumsiness and multiplicity were quite unsuited for such delicate procedure as the closing of clefts in infancy. Even if the patient survived, many of the operations which were easily performed in infancy were impossible later in life, since the presence of the teeth deprived the surgeon of about two-thirds of the breadth of the flap by means of which the aperture could be closed. He therefore determined to operate as soon after birth as possible in order to save many of the lives of those infants with extensive cleft palates who would otherwise succumb if not operated on. That procedure was fully justified by the results, since the closure of the cleft was followed by an immediate and progressive improvement in the constitution of the child. It was obvious that the operative methods and the instruments then in use would be of no service for such a delicate operative procedure. He therefore devised the flap method, which he had employed throughout. He first attempted to reduce the instruments then in use to some reasonable proportions. They were, however, hopelessly inadequate for the purpose required of them. Early in 1896 he had had made a needle-holder with minute needles which he had used ever since. That instrument had remained unchanged in its original form. He also had gags made which had been

equally useful and successful. By means of those implements he had operated on a very large number of cases during the last 16 or 17 years, probably on more than any surgeon had ever operated on or would operate on in future since such an opportunity would in all probability never arise again. In England the opposition to any change in the surgical creed was so intense that he had the whole field to himself till quite recently. His opponents were satisfied to stand aside and criticise and did not take the trouble to render themselves familiar with facts. Consequently he was inundated with material and operated on as many cases as he wished to. The number was only limited by the fact that even in a children's hospital the proportion of infants that could be admitted into a ward was limited and the number of cots in a general hospital was small. While the surgeons at home were satisfied to criticise or merely abuse the procedures he advocated those abroad after a considerable time took steps to operate earlier in life, using various methods to effect closure of the cleft. Some surgeons had recently begun to realise that their beliefs on the subject of cleft palate and its treatment were not based on quite such a secure foundation as they had believed, and they had gradually reduced the age at which they operated on cases of cleft palate. The best evidence he had of that was that the supply of infants with cleft palates sent up to the Hospital for Sick Children under his care had diminished very much within the last year, while at the same time the simpler forms presented themselves in a smaller proportion than heretofore. He also gathered from many of his more progressive friends that they operated freely upon them with great success. The mortality of the operation was comparatively small considering the desperate condition in which some of those children were in when admitted, and the slight hold on life which many of those cases had. Mr. Barrington Ward, their medical superintendent at the Hospital for Sick Children, told him that the mortality did not exceed 5·9 per cent. It was perfectly obvious that the more serious the case the earlier in life it was operated on the better. The urgency varied directly with the severity of the deformity, and in severe cases every hour which elapsed between the birth of the child and the operation was of considerable importance. The earliest he had done had been within seven hours of birth. In the first few days of life those infants were at their best and appeared to show very much less evidence of shock than they did later. Besides, at that period the procedure was a very simple one and improvement followed rapidly. Changes in the form of parts such as the premaxilla took place with extraordinary rapidity during the first week of life as compared with the changes which ensued afterwards. The effect of closure of the cleft on the general condition of the child was also most striking. Putting the matter as briefly as possible, Mr. Arbuthnot Lane said that early operation saved a large number of lives which would otherwise be lost. Many of the clefts present in those cases could only be closed before the gums were encroached on by the teeth. The sooner the nose was separated off from the mouth the earlier the naso-pharynx was exposed to the influence of the mechanical factors which normally determined the developments of that passage and of the structures which surrounded it.

Dr. ULRICH (Copenhagen) read a paper on 56 Cases of Cleft Palate treated by operation, by the methods of Langenbeck, Arbuthnot Lane, and Brophy. He commented on the technique used, detailed the results, and contrasted the three methods. He showed an instrument for squeezing the upper jaw in such cases, but admitted that the results were hardly satisfactory, two deaths having occurred out of seven cases. (This paper will be published in our columns.)

Mr. EDMUND OWEN sent a letter in which he recommended Brophy's method of operation.

Mr. DOUGLAS DREW said that there was no doubt that the teaching of Mr. Arbuthnot Lane had guided many surgeons and influenced them in the operative procedures for cleft palate. Many surgeons now operated at a much earlier age than they did formerly. He (Mr. Drew) had operated on patients as young as seven months, but he had never performed Lane's operation because he considered it an extremely dangerous operation in such young subjects. It appeared to Mr. Drew that there must be a large amount of cicatricial tissue formed as the result of Lane's operation, and the movement of the palate would be therefore much more limited than after Langenbeck's method with the consequent influence on the speech in after-life. Mr. Drew considered the results of Langenbeck's operation superior to Lane's from three points of view—appearance, mobility, and influence on the speech.

Mr. C. H. FAGGE said that he used Lane's method and for the last nine years he had been led to operate earlier in life. The time of selection in difficult cases was about the first month. Whatever opinion there might be about the time of operation there was no doubt that the way to close a cleft palate was by Lane's flap operation.

Mr. JAMES BERRY said that in his opinion a wide cleft with a rounded anterior border was the most difficult kind of cleft to close by operation. Mr. Arbuthnot Lane had said that there were cases of cleft palate which if not operated on in infancy could not be closed afterwards, but he (Mr. Berry) would like to see any cleft palate case between two and three years of age in which the cleft could not be closed. Mr. Berry had used Langenbeck's method in 144 cases and had not had one death. In regard to the saving of life by operating early he said it was difficult to judge without statistics, but his own experience was that far from saving life the early operation very often caused the reverse. Mr. Berry believed that the period of choice for operation in the great majority of cases was from about two years of age; there were very many patients with narrow clefts that could be operated on earlier and some even in the first year of life. The operation for a wide cleft was rendered easier by waiting till the child had reached the age of two years. Mr. Berry expressed strong disapproval of Brophy's method.

Mr. G. E. WAUGH said that they ought not to let it go forth as the unanimous opinion of that meeting that surgical operations could hold out hope that patients would be able to disguise completely their deformity in after-life.

Mr. L. E. BARRINGTON WARD said that his contribution to the subject was based almost entirely on an analysis and examination of the cases operated on by Mr. Arbuthnot Lane in the Hospital for Sick Children, Great Ormond-street, during the past two years. In every instance the cleft was repaired at as early an age as possible. In this period 369 operations were performed by Mr. Arbuthnot Lane for the relief of cleft palate with a mortality of 5·9 per cent. This figure included cases where a second or third operation was necessary, the number of new cases operated on for the first time being 172. Of those, one patient was but ten hours old, 14 were up to one week, 43 to one month, 66 to six months, and 28 were over one year of age. Thus it could truthfully be described as an early operation. No case was refused because of the extent of the deformity, but five were discharged unrelieved on account of such varied conditions as bronchitis (two), convulsions, hydrocephalus, and a skin complaint. Nor was any case refused operation on the ground of malnutrition, for the majority of babies afflicted with severe deformity suffered from marasmus, and operation was undertaken with the idea of remedying their disability and enabling them to take proper nourishment. Distinction in any particular line brought in its train certain disadvantages. From the statistical point of view at any rate, not the least of those was the natural tendency for the worst cases to gravitate into the hands of the most competent. He did not know, but he should think it probable that Mr. Arbuthnot Lane had more of those cases sent to him than anyone else, and the majority of them were examples of extreme malformation. Thus in 53 per cent. there were complete clefts of both lip and palate; in 36 per cent. the hard palate, and in 11 per cent. the soft palate only was involved. In comparing the final results of any two methods it was necessary to take into account the degree of the previous deformity. It was hardly necessary to add that the method of operation was by muco-periosteal flaps—a method which Mr. Arbuthnot Lane had made so peculiarly his own. In the majority of instances so wide was the gap that simple paring and suturing, even by the most competent hands, could not have effected a cure. He had endeavoured without success to find in the published writings of the advocates of the so-called late operation any data on which they determined the age at which in their opinion operation should be performed. It was generally given at about three or four years of age, and the only reason brought forward was that it was safer to operate at that age than earlier. On the same analogy it might with equal truth be said that operation should be postponed till puberty or later, for then the

risk of operative measures was still further decreased. Any other objections against the early operation were found on examination to be really levelled against the more modern method of closing the cleft with muco-periosteal flaps, in defence of the old-fashioned procedure of simple paring and median suture. Thus it was claimed, without any proof, that the speech was better after median suture because the palate received less damage. That they would be ready to believe if the operation consisted only in simple paring of the edges of the cleft and their approximation by sutures; but an integral part of the operation, except in the simplest of cases, was the free incision of the lateral part of the palate and sometimes fracture of the hamular process also. The watchword of the median suture operator was "No tension," and to ensure that, according to a widely read modern text-book on surgery, it was necessary to divide the levator palati and to snip across both anterior and posterior faucial pillars containing the palato-glossus and palato-pharyngeus muscles respectively. It was hardly reasonable to urge that a more natural palate was the result of that interference. The question of tension never entered into the flap operation. The treatment of cleft palate by bridging the gap with reflected flaps was merely an extension of the general surgical principle of overlapping which had come into recognition for dealing with abnormal openings anywhere in the body. It had appeared to him that a surgeon who preferred to wait some years before operating took a very limited view of the question. He looked at the actual cleft as a thing by itself, and neglected the attendant circumstances. His attention was so firmly fixed on the cleft that he failed to note the naso-pharyngeal catarrh, the rhinitis, the ulceration of the septum, the Eustachian catarrh with the attendant risk of middle-ear and mastoid suppuration, the increasing oral sepsis, which were often present in the older cases and which were a constant menace to the health if not the life of the individual. Careful attention might prevent those complications from occurring, but the average hospital mother was not very intelligent; her surroundings were not very conducive to cleanliness; nor if she wished could she give the necessary time to the task of feeding and cleaning the baby properly. The more certain way of avoiding those troubles was by repairing the cleft at the earliest possible date, to enable the infant to breathe in the normal manner, to confine its food to the proper channel, and to improve its nutrition and resistance to all forms of infection.

Mr. F. F. BURGHARD said that it was clear that the results of Langenbeck's method were in no way inferior to the results of Lane's flap operation, but were apparently better. He joined with Mr. Berry in asking for more information as to the life-saving effects of operating early according to Lane's method.

Mr. T. H. KELLOCK said that for the advocates of the early operation of Lane to say that the infants die if they are not operated on early was going too far: to say it was a life-saving operation was claiming too much. Mr. Kellock considered that Langenbeck's operation could produce an ideal result.

Mr. W. G. SPENCER pointed out the inadvisability of surgeons expressing dogmatic opinions concerning Lane's flap operation without themselves having done the operation. He (Mr. Spencer) had carried out Lane's method in 14 cases, and his criticism was a favourable one.

Mr. ARBUTHNOT LANE replied and the meeting concluded.

LARYNGOLOGICAL SECTION.

The Treatment of Purulent Discharge from the Frontal Sinuses.

A MEETING of this section was held on May 5th, Dr. P. WATSON-WILLIAMS, the President, being in the chair.

A discussion was held "On the Present Position of the Treatment of Purulent Discharge from the Frontal Sinuses." Cases and skiagrams illustrating the frontal sinuses and frontal sinus operations were shown by Dr. STCLAIR THOMSON, Mr. HERBERT TILLEY, Dr. I. MOORE, Mr. W. STUART-LOW, and photographs and diagrams illustrating the same subject were thrown on the screen by Dr. WATSON-WILLIAMS.

The discussion was opened by the PRESIDENT, who submitted an abstract to the meeting, pointing out that the subject fell under two main headings—viz., the treatment of acute and of chronic cases of frontal sinusitis. In acute frontal sinusitis reliance was largely placed on treatment by diaphoretics, counter-irritation, Bruening's light head-bath, and intranasal lavage and local sedatives; but in certain cases operative measures were necessary, either intranasally or externally. As regards chronic frontal sinus suppuration, intranasal treatment by lavage should be tried, combined with the dealing with coexisting pathological conditions in the nose. Nitrate of silver and protargol as local applications were useful in some cases. Vaccines rarely effected a cure. Intranasal operations, with a view to enlarging the fronto-nasal passage, were practised and advocated by some. The Roentgen ray screen was of use in diagnosis in some cases. In a large proportion of cases the fronto-nasal duct was abnormally patent and free drainage was not always sufficient to effect a cure. Many methods of radical operation have been advocated, amongst which may be mentioned the Ogston Luc, Killian's, the Watson-Williams's osteoplastic, Delsaux's, Rudel's, and Kuhnt's operations. If maxillary antral empyema or purulent discharge of the posterior ethmoidal cells or sphenoidal sinus coexist these should be opened up and treated before resorting to any external operation as a rule. The particular type of operation must be determined by the nature and conditions of the individual case, but a method should be adopted which allows free access to the whole of the involved territory and ultimate obliteration of the suppurating cavities with the least deformity.

The following gentlemen joined in the discussion: Dr. STCLAIR THOMSON, Mr. TILLEY, Dr. J. DONELAN, Mr. F. J. STEWARD, Dr. D. R. PATERSON, Dr. L. H. PEGLER, Mr. W. J. CHICHELE NOURSE, Dr. DAN MACKENZIE, Dr. IRWIN MOORE, Dr. G. WILLIAM HILL, Dr. W. H. KELSON, Dr. A. BRONNER, Mr. STUART-LOW, Mr. E. B. WAGGETT, Dr. DUNDAS GRANT, and Dr. H. J. DAVIS. The general opinion of the members of the section was that there was now a distinct tendency to avoid external operations on the frontal sinus as much as possible, and that the number of cases operated upon by the external route was decidedly smaller than formerly, one reason being that the osteomyelitis which sometimes ensued as the result apparently of these operations had proved almost invariably fatal.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.

The Present Position of the X Ray and Radium Treatment of Malignant Disease.

A MEETING of this society was held on May 5th, Dr. PHINEAS S. ABRAHAM, the President, being in the chair.

Dr. REGINALD MORTON read a paper entitled "The Present Position of the X Ray and Radium Treatment of Malignant Disease." After briefly reviewing the principles involved in the method and the limitations and difficulties to be considered, he showed how it was that the results of radium treatment were not more completely successful than they were at present. He also pointed out how impossible it was to predict with even a small degree of accuracy how any given case was going to respond to X ray or radium treatment, and quoted cases of an identical nature that gave opposite results though treated in exactly the same way and with the same apparatus. Looking back over a period of ten years he found that some of his most successful cases had been treated in the earlier days before measurement and the use of filters came into use, and when the production of a more or less mild degree of X ray dermatitis was comparatively common during the progress of the treatment of cases of this kind. This, he thought, gave them cause to ask themselves whether they were doing the best for malignant cases by keeping back the reaction that would follow a thorough irradiation. The most strikingly successful case in his experience had been treated with a series of massive doses which were followed by a very intense dermatitis. Summing up the present position of the matter, he said that the X rays had a definite inhibitory action on all cellular growths when applied strongly and for a sufficient time, and under favourable conditions would bring about their destruction and removal. This, however, did not take place to any appreciable extent after the rays had traversed a certain thickness of tissue, which was about 1 centimetre. Cancerous and other diseased cells

being of lower vitality than normal cells were more easily destroyed than the latter, and for this reason they could affect them at a greater depth. The prospects of bringing about a definitely favourable influence upon any case were directly dependent upon the thickness of the growth; if more than half an inch and advancing, X ray treatment was not likely to do very much good. Pain when present was relieved in nearly all cases. Dealing with the question of recurrence, he stated that he was a strong believer in immediate post-operative X ray treatment as a means of reducing this unfortunate tendency, but he would go even farther than is usually done. With modern apparatus it was possible to administer a full therapeutic dose in less than five minutes. This made it feasible to treat the operation area in the theatre before the surgeon closed the wound, and he believed such an application would have far more effect than a number of applications given some time after the operation. Prophylactic X ray treatment should be carried out at intervals of three months during the first year and at longer intervals during the second and third years. Passing on to the subject of radium, he showed that the principles involved were the same as in X ray treatment, but that the advantage of radium was that it could be applied to parts inaccessible to the X ray tube, and that the radiation from any given specimen was constant and definite. Owing to the limited supply it was not so good as the X ray tube for treating severe cases of an extensive character. Neither method gave them any control over metastasis, and recurrence was not influenced whatever the method of treatment employed. If operation was feasible it should be done in all cases and without delay, but post-operative X ray or radium treatment should also be commenced immediately afterwards, and he firmly believed that if this were done as a matter of routine in all cases the percentage of recurrences would fall off. If it was decided that a case was inoperable, then X ray or radium treatment should be tried at once and carried on for at least one month, by which time there ought to be some definite indications as to any good resulting therefrom. Even at the worst the patient was made more comfortable both physically and mentally.

The PRESIDENT remarked that he had seen a specimen from a case of malignant disease of the breast cured by X rays; on section nothing but fibrous tissue was left.

Dr. C. E. IREDELL said that it was impossible to tell from a microscopical examination if a given section had been X rayed or not. In discussing radium, the quantity used was of great importance. He had better results with 22½ mgrm. than with smaller amounts. He believed radium was more likely to cure cancerous masses than X rays. Both X rays and radium were of definite use in cases where the surgeon considered a recurrence probable after operation.

Dr. C. J. MORTON said that the rôle of radium as a curative agent in cancers was well defined, while that of X rays was in a transition stage. Repeated doses of hard X rays gave better results than pastille doses. X rays should be used as a prophylactic measure immediately after operation. He used for radium treatment the varnished applicators and lead screens advocated by Dr. Wickham of Paris. He had seen a recurrent carcinoma grow to the size of half a Tangerine in three weeks and disappear under radium in a fortnight. The only guide as to which cases would benefit with radium was to give a trial.

Mr. W. MCADAM ECCLES was sure that immediate post-operative administration of X rays was a sound procedure. He would ask Dr. Reginald Morton whether the radiations from radium penetrated deeper than those from an X ray tube, and if so, whether this might not be a point in favour of using radium for more deeply seated new growths.

Dr. A. J. RICE-OXLEY and Dr. G. HILL also joined in the discussion.

In reply, Dr. REGINALD MORTON said that the cases one was asked to treat were, as a rule, so far advanced that in many of them there was little hope of any benefit following. He believed that in severe cases it was better to produce reaction than not to do so. He had examined a few cases microscopically, and in some cell atrophy, in others fibrotic changes were noticed. He felt sure that post-operative X ray treatment before the closing of the wound would materially influence the percentage of recurrences if carried out systematically. The penetration of any given specimen of radium was constant, while that of an X ray tube was constantly varying while in use. He was doubtful if the curative influence of radium extended any more deeply than that of an X ray tube suitably adjusted for the work. All available evidence pointed to the fact that what radium did was to substitute a thin layer of scar tissue for the leukoplakia of the tongue.

MEDICO-CHIRURGICAL SOCIETY OF GLASGOW.—A meeting of this society was held on May 5th, Professor R. Muir, the President, being in the chair.—Dr. T. K. Monro showed a man who had recovered from an attack of Acute Ascending (Landry's) Paralysis. The illness began on Oct. 14th, 1910, with weakness at the right knee, twitchings in both legs, numbness and prickling up to the knees. On the 17th the upper limbs were similarly affected. By the 20th he was unable to stand or walk, and had severe pains in the legs. On admission to the Royal Infirmary on the 21st there were noted, in addition to weakness and flaccidity of muscles, absence of plantar and deep reflexes, impaired sensation, and normal electrical reactions. During the first week of November he had incontinence of fæces, retention of urine, and delirium. By Nov. 10th there was some return of power in the arms, and by the 16th slight return in the legs. Improvement continued till by Dec. 24th the patient could stand without assistance and left the infirmary. Examined on May 5th, 1911, the patient was found to have both knee-jerks present though reduced, and but for occasional slight numbness in the toes was in perfect health.—Dr. J. H. Teacher showed (for himself and Dr. Madge E. Robertson) sections of the Spinal Cord and Posterior Root Ganglia from a case of fatal anæmia in a man aged 54. The patient was admitted to Dr. Monro's wards in the Royal Infirmary on Nov. 23rd, 1910, on account of weakness of 19 months and sickness of six weeks' duration. In spite of treatment with Fowler's solution and later with soamin, he died on Dec. 7th. Blood examinations during life gave the following results: hæmoglobin, 20 to 55 per cent.; red corpuscles, 1,266,000 to 1,300,000 per cubic millimetre; colour index, 0·77 to 1·0; white corpuscles, 6266 to 8130 per cubic millimetre. The microscope showed poikilocytes and a few myelocytes, but no nucleated red corpuscles. Sections from the lower dorsal region of the spinal cord showed a peculiar degeneration, the myelin sheaths being swollen and staining black by Marchi's method. On one side this change affected the crossed and direct pyramidal and pre-pyramidal tracts and anterior and lateral basis bundles; on the other side parts of basis bundles and direct pyramidal tract had escaped. Posterior columns were affected in small area in extreme front of one column of Goll. Ascending cerebellar tracts clear on both sides. Distinct degenerative changes in ganglion cells generally, especially in lower dorsal region. Owing to restriction of examination of the body the upper limits of the degeneration were not ascertained. It was absent from the lowermost dorsal and lumbar segments.—Dr. Leonard Findlay read a paper on the Origin of Pulmonary Anthracosis: an Experimental Study, illustrated by lantern slides.—Dr. A. Young showed a specimen of Intussusception of the Appendix from a child aged 4½ years. The boy had suffered for about two weeks from severe abdominal pain, referred to the umbilicus, recurring at intervals of half an hour. No sickness, vomiting, or passing of mucus or blood. No swelling or tenderness anywhere in abdomen. The patient's medical attendant, regarding the pain as probably due to colic caused by chronic constipation, had prescribed aperient medicine and enemata of olive oil, but without relieving the pain. On March 17th the child was admitted to Broadstone Jubilee Hospital, Port Glasgow, and operated on on March 27th. The bowel was found free from adhesions, but only about a centimetre of the appendix tip was visible, the remainder being invaginated into itself and carrying the cæcal wall with it. An attempt to reduce the intussuscepted organ having failed, the appendix with a sufficient ring of cæcal wall was removed, the gap in the cæcum closed, the bowel returned, and the abdominal wound sutured. The child made an excellent recovery. Dr. Young referred to a similar case in a woman, aged 24 years, admitted to the same hospital on Feb. 11th, 1911, with symptoms of acute appendicitis of 48 hours' duration, sickness, vomiting, pain, temperature 102° F., pulse 116, rigidity of abdominal wall in right iliac

region, local tenderness, and a palpable mass in the appendix region. Operation was performed at once. The bowel was non-adherent; the appendix was much swollen in its terminal half, the proximal half being invaginated into the cæcum. The invaginated appendix was withdrawn and removed by the cuff method. The after-course was uneventful.

THE NEW LONDON DERMATOLOGICAL SOCIETY.—A meeting of this society was held on May 11th, Dr. P. S. Abraham, the President, being in the chair.—Dr. Norman Meachen showed a patient with a curious Lichenoid Pigmentation beneath both axillæ, and also a case of Acne Variioliformis in a married woman with a syphilitic history.—Dr. W. Knowsley Sibley read a short paper upon the Treatment of Scar Tissue, illustrating his remarks by a patient with severe variolous pitting of the face who had been successfully treated by hyperæmia with suction cups, hypodermic injections of fibrolysin, cataphoresis with 2 per cent. sodium chloride solution and 10 per cent. thiosinamin solution, and small repeated doses of X rays.—The President showed: 1. A man, aged 49, with Mycosis Fungoides in which the X rays had yielded some beneficial results, but latterly an injection of salvarsan had been given. 2. A girl with Peculiar Nodular, Ringed Lesions upon the Ulnar Side of the Left Forearm. The clinical resemblance to granuloma annulare was well marked. 3. A woman, aged 60, with Epithelioma of the Cheek following upon Lupus Vulgaris of the Face, the latter condition having quieted down considerably under X rays.—Dr. David Walsh read notes of a case of Osmium Vapour Rash in a middle-aged man, a platinum-worker, who noticed a rash upon the face a week after being exposed to the fumes of osmium. The condition apparently had not been previously described.—Dr. Walsh also showed a man with a Reddened Patch, of a psoriasiform character, with curious dentated, keloidal margins upon the right forearm.—Dr. Agnes Savill showed a woman, aged 37, with Lichen Plano-pilaris, the area affected being the skin over the manubrium sterni and the back of the scalp. The condition had been verified microscopically, and the lesions were of the "white papule" type of Crocker.

MEDICO-PSYCHOLOGICAL ASSOCIATION.—A meeting of the Northern and Midland Division of this association was held at the City Asylum, Nottingham, on April 27th, Mr. Evan Powell being in the chair.—Dr. W. J. A. Erskine read a paper on Asylum Dysentery. He excused himself for his subject by quoting the Lunacy Commissioners' report, "there is still a singular difficulty in affording a reasonable explanation of the exceptional prevalence of dysentery in asylums." He discussed the various factors which favoured it, mentioning overcrowding, constipation, the dirty habits of the insane; also the possibility of there being dysentery carriers, as there are typhoid and diphtheria carriers. In this paper he proposed to call attention to three other factors in causation—viz.: 1. The presence of kidney disease rendering a patient more liable. He had noticed a peculiar slimy condition of the peritoneal surfaces of the intestines in kidney disease. Probably the extra work of excretion thrown upon the bowels in these cases had something to do with their liability to dysentery. 2. Tubercular cases were liable to dysentery and became more dangerous as sources of infection from it than from their original disease. 3. He had been struck by the fact that influenza and colitis had been epidemic in the asylum at the same time, and that three annual epidemics of colitis had followed three annual influenza epidemics. He therefore submitted that some cases of so-called asylum dysentery were really influenza, and further that influenza was a cause of asylum dysentery. He then gave a history of the cases of dysentery occurring in the Nottingham Asylum for several years past and showed their relation to outbreaks of influenza. As to the treatment, the preventive one of regular administration of saline purgatives seemed the best. He believed in the prompt isolation of the cases when they occurred, and the careful education of the nursing staff in dealing with them. He had found tincture of belladonna very useful.—An interesting discussion took place, in which Mr. Powell, Dr. W. J. N. Vincent, Dr. S. R. Macphail, Dr. R. J. Legge, and others took part. Some doubt was raised as to the relationship between influenza and colitis. A query was put forward as to whether the turning up of new soil in digging foundations had any connexion with outbreaks of colitis.—Dr. Henry Devine read a paper entitled "The Pathogenesis of a Delusion." A young woman developed the delusion that she was suffering from an infectious disease and that those around her were in danger of becoming affected. A psycho-analysis was undertaken to trace the source of this delusion. By means of Jung's association experiment it became manifest that underlying the delusion was a concealed complex giving rise to feelings of shame and self-reproach. This was found to depend on an experience with her lover a short while before. She accused herself of having acted wickedly. Since, however, her behaviour had not been open to criticism it became obvious that her self-accusation was itself a delusion covering a deeper complex. Further analysis revealed the fact that the patient had determined to avoid marriage on the ground that she had an insane heredity. The psychosis had therefore arisen out of two conflicting wishes: (1) natural sex instincts and (2) a wish to remain single. The delusion was the symbolic representation of her original determination and enabled the patient to gratify her ideals and solve the conflict in a manner impossible in contact with reality. The analysis is also a method of treatment, a form of re-education. As the mechanism became obvious to the investigator it was possible to lead the patient back to reality once again.—A discussion followed in which a number of members took part.—Dr. Erskine then read an account of a case of self-inflicted abdominal injury.—Dr. W. R. Allen gave some notes of a case of Gangrenous Emphysema of the Thigh occurring in a general paralytic.

UNITED SERVICES MEDICAL SOCIETY.—A meeting of this society was held at the Royal Army Medical College, Millbank, on May 10th.—A paper on the Action of Quinine on Malarial Fever was read by Fleet-Surgeon J. H. Whelan, R.N. (retired), who took the view that quinine acted by destroying the malarial red blood cells, causing them to break up and so leading to the death of the young parasites in the blood-stream before they had time to sporulate—i.e., by snapping the cycle of Golgi. He thought that the temperature charts which he showed bore out his contention that the action of quinine was to set free toxin and cause a rise of temperature shortly after its administration. Some experiments with malarial blood outside the body showed that quinine in the strength of 1/20000 was able to liberate the parasites in fair numbers, and as the quinine content could be raised as high as that in the body he considered the same thing took place there.—Major W. S. Harrison, R.A.M.C., said that the paper was interesting from a theoretical standpoint, but the action of quinine as a poison of the malarial parasite inside the red blood cell could be demonstrated easily; that one did not find extra corpuscular parasites in the blood of patients taking quinine, and that the temperature charts could be explained in another way.—Fleet-Surgeon W. A. Whitelegge, R.N., then read a paper on Eye-strain in the Royal Navy. He purposely left out of consideration for the time being asthenopia due to errors of refraction, and considered eye-strain under the headings of: (1) ciliary strain; (2) muscular strain; and (3) retinal strain. In two years 4819 cases were examined and he had found 18 instances of accommodative and 15 cases of muscle balance error of a more or less degree in which the symptoms had persisted and which were caused by the strain of using high-power telescopes, binoculars and range finders, but especially the latter, where the magnification was very great and the lenses on the two sides were of different power. In these circumstances a very great strain was thrown on the eyes, and minor discomforts were extremely common. Many other causes of eye-strain were mentioned and the symptoms given.—Fleet-Surgeon A. Gaskell agreed that a great deal of eye-strain was caused by defective muscular balance—heterophoria. He thought that a tendency to squint was a very fertile source of eye-strain, and that squints of a minor degree were commoner than most people supposed. He considered that people were too apt to try to cure this condition by means of glasses.—Some discussion then took place on the subject of the "master eye," and a variety of opinions were expressed.

THE next meeting of the Medico-Legal Society will be held at 11, Chandos-street, Cavendish-square, London, W., on Tuesday, May 23rd, at 8.30 P.M., when the subject for consideration will be "National Insurance against Sickness," introduced by Mr. J. Smith Whitaker, medical secretary to the British Medical Association.

Reviews and Notices of Books.

Die Erweiterte Abdominale Operation bei Carcinoma Colli Uteri auf Grund von 500 Fälle. (*The Extended Abdominal Operation in Cancer of the Neck of the Uterus, based upon 500 Cases.*) Von Professor Dr. E. WERTHEIM in Wien. With 6 plates and 11 illustrations in the text. Berlin und Wien: Urban und Schwarzenberg. 1911. Pp. 223. Price, paper, M. 12; bound, M. 14.50.

IN this work Professor Wertheim has published the complete results of his first 500 cases of the extended abdominal operation for cancer of the cervix uteri. The manner in which the details are given will serve as a model for all future publications of the kind, and inasmuch as not one single case has been lost sight of, the conclusions to be derived from a study of the tables are of the very highest importance. The amount of work entailed in the production of this report must have been immense, and we know not whether to admire most Professor Wertheim's skill as evidenced by his operative results or his painstaking industry of which this book is so remarkable a testimony. The details of the whole 500 cases are set out first in tabular form, and then the various points of interest and importance are discussed. We may note that only cases of cancer of the cervix and of the upper third of the vagina are included in the tables, all cases of cancer of the body of the uterus being excluded quite rightly from consideration.

In discussing the technique of the operation stress is laid on the avoidance of septic infection and primary infection from the cancerous growth by the preliminary curetting and cauterisation of the growth, and by the use of special clamps for the complete closure of the vagina over the growth during its removal, a most essential part of the technique of the operation. Professor Wertheim now uses the curved forceps of Winternitz in place of his original pattern of rectangular forceps, which certainly is difficult to apply and not very satisfactory to use. The results obtained in this series of cases seem to show that the contention of the author is correct—namely, that this method of avoiding infection is more satisfactory than any of the others, such as removing the separated uterus by the vagina, which has been recommended by other operators. The curetting and preparation of the growth by the vagina are practised immediately before the operation is performed. Gauze drainage is employed for the raw surfaces left, iodoform gauze being used, the peritoneum of Douglas's pouch having first been united to that of the bladder. The gauze is removed gradually from the fifth to the ninth day. Bumm, who at one time had given up drainage, has returned to its use, but unites the peritoneum of Douglas's pouch to the posterior wall of the vagina and that of the bladder to the anterior wall of the vagina, leaving the latter canal wide open and introducing a gauze drain so placed as to flatten down the peritoneum upon the raw surfaces of the cellular tissue. Bumm has returned to the use of a drain, since Liepmann has shown that virulent streptococci can be cultivated from the parametrium in many of these cases.

In freeing the ureter the method, first, we think, recommended by Sampson and not by Bumm and Krönig as the author says, is employed of splitting the two layers of the broad ligament and finding the ureter on the posterior layer, a method which is an easy and certain one. Preliminary catheterisation of the ureters does not meet with any favour. The difficulty that may occur in the freeing of the ureter is drawn attention to, and five cases are quoted in which it was impossible to free the pelvic portion of the ureter until the vesical portion had first been dissected out. The fact that the wall of the ureter is extremely resistant to invasion by cancer cells is shown, and out of six cases in which portions of the ureter were resected the microscope demonstrated that in four the resection was not really necessary. In 11 cases the ureter was injured during the operation and in 32 cases a ureteral fistula formed; 15 of these, however, healed spontaneously, and in not one of them were there any symptoms of the occurrence of stenosis of the duct. The frequency with which infection of the kidney follows a fistula that does not speedily heal is important, and the fact should be noted that of the 93 patients who died nine died from pyelonephritis.

Professor Wertheim does not believe that drainage plays any part in the production of ureteral fistulæ, nor does he lend any support to the view put forward by some that the use of an iodoform gauze drain predisposes to the occurrence of cystitis. He believes that in a certain number of cases the formation of a ureteral fistula is unavoidable, but recommends that care should be taken to avoid the isolation of the ureter as far as possible by finding it on the surface of the posterior layer of the broad ligament, that it should be carefully covered with peritoneum, and that great care should be taken in tying ligatures in its immediate vicinity not to kink it. In five cases the unfortunate accident of a double ureteral fistula occurred, and in 45 cases the bladder was injured. When the bladder wall is markedly thinned the author recommends that the thinned portion should be turned into the interior of the lumen and the neighbouring undamaged portions of the bladder wall sewn together over it. Injuries to the rectum occur very infrequently.

With regard to the removal of the lymphatic glands, Professor Wertheim holds that the removal of all the glands is generally not possible, and usually not necessary. Only in those cases in which the glands are definitely enlarged is their removal undertaken, when they are not much involved, at the end of the operation; but in cases where they are markedly enlarged and may be difficult to remove a careful examination is made before the extirpation of the uterus, so that the removal of that organ may not be undertaken needlessly in case the glands cannot be completely extirpated. In order to shorten the period of anæsthesia the preliminary curetting and cauterisation of the cervix are undertaken without anæsthesia. In 33 cases lumbar anæsthesia was employed, in 19 cases stovaine, and in the remainder tropacocaine. In one case in which stovaine was employed there was paralysis of the respiratory centre, and in two inhalation narcosis had to be resorted to. On the whole, his impressions of lumbar anæsthesia in this operation are very good, and he is of opinion that it has enabled him to undertake operation in cases in which otherwise it would have been impossible.

The 500 cases which form the subject of this monograph correspond to 1096 cases of cancer of the cervix seen, in 55 of which operation was refused, 22 were operated upon by the vagina on account of excessive fatness or advanced age, and in 519 the disease was too advanced for any operation to be undertaken, giving an operability rate of 50 per cent. In 79 of the cases an exploratory operation was performed and the disease found too advanced for complete removal, a method of determining the exact condition of the disease which the author recommends in all doubtful cases.

The number of deaths among the 500 cases was 93, a mortality rate of 18·6 per cent., and in all cases the cause of death is stated clearly. The mortality rate varied from 30 cases in the first hundred to 9 in the fourth and 15 in the last hundred. The main causes of death were peritonitis, heart failure, and kidney trouble. Of the 500 cases, in 250 five years have elapsed from the time of the operation, and this

number therefore is available for the purpose of estimating the actual percentage of cures after five years. In 78 of these, recurrence of the growth has occurred, 106 are free from recurrence, 63 died as a result of the operation, and 3 died from some intercurrent disease. In the great majority of the cases the recurrence occurred in the region of the glands and only in a very small number in the scar itself. In 62 of the cases the glands were evidently involved at the time of the operation; of these, 20 succumbed to the operation and 1 died from some intercurrent disease, while of the remaining 41 only 5 are free from recurrence after five years. These figures are in striking contrast to the fact that of the 142 cases in which the glands were not involved at the time of the operation, 100 have remained free from any recurrence; that is to say, recurrence has occurred in 87·8 per cent. of the cases with glands involved, and in only 29·5 per cent. where the glands were not involved, or a freedom from recurrence almost three times as great in the latter. In determining the absolute percentage of cures among the 250 cases corresponding to 607 cases seen, 3 who died from intercurrent disease and 28 who refused the operation are deducted, leaving 576 patients, of whom 106 are alive and free from recurrence after five years, an absolute percentage of cure of 18·4 per cent. and a percentage cure of those operated upon, the 3 dying from intercurrent disease alone being deducted, of 42·9 per cent. Zweifel has attained an absolute cure of 20·9, while von Rosthorn, on the other hand, records an absolute cure of only 2·2 per cent.

In a comparison of the extended abdominal operation with the extended vaginal, Wertheim maintains that the former has the great advantage of increased accessibility and that it permits of the removal of the glands when necessary, and he sums up strongly in its favour, although he points out that Staude has had very excellent results by the vaginal operation—namely, an operability rate of 72·3 per cent. and an absolute cure rate of 23 per cent.

Anyone who studies these results with an unbiassed mind cannot help coming to the conclusion that the extended abdominal operation presents marked advantages over any other and is essentially the operation which should be undertaken in these cases. We may well hope that even better results than the very good ones recorded in this monograph may be obtained in the future, as cases of this kind come earlier under observation and the technique of the operation becomes even further improved and its immediate mortality progressively lowered. In the meantime every gynæcologist owes a deep debt of gratitude to Professor Wertheim, not only for the publication of these splendid results but also for the part he has played as a pioneer in the development of the technique of the operation which is known by his name.

Serum and Vaccine Therapy, Bacterial Therapeutics and Prophylaxis, Bacterial Diagnostic Agents. By R. TANNER HEWLETT, M.D. Lond., F.R.C.P. Lond., D.P.H., Professor of General Pathology and Bacteriology, King's College, London; Director of Pathology, Seamen's Hospital, Greenwich; Lecturer on Bacteriology, London School of Tropical Medicine. Second edition. London: J. and A. Churchill. 1910. Pp. 406. Price 7*s.* 6*d.* net.

THE applications of bacteriology to treatment involve for their rational employment a knowledge of the general principles of infection and immunity. Moreover, it is desirable that the practitioner employing serums, vaccines, and other substances of bacterial origin should have due knowledge of their nature and of the processes by which they are prepared. Professor Hewlett supplies this information in the book before us in a form at once readable and instructive; for although processes and methods of no little complexity are described, the descriptions are as far as possible divested of technicalities, or where these are necessary they are clearly explained and in many cases illustrated by diagrams or figures. In addition, the therapeutic application of serums and vaccines is adequately discussed. Questions of dosage and the methods of administration are dealt with fully, and practical directions are given in regard to these matters. Where different authorities recommend different procedures these are usually described, often with quotations from the original papers, and at the end of each section the important literature of the subject is appended. The accounts given of the preparation of diphtheria and tetanus antitoxins and of the methods of standardisation are worthy of special commendation. Antivenin and its standardisation are described and its therapeutic uses and value are discussed. The numerous serums which have been introduced for the treatment of other diseases are also described, though Professor Hewlett suggests that there is reason to think that the serum treatment of disease has been carried to excess.

Similarly in regard to vaccines, the methods of preparation and of counting the organisms where dosage depends upon the number of bacilli employed are thoroughly explained. The nature of the opsonic index and the method of determining it are clearly set forth. The preparation of sensitised vaccines, as recommended by Besredka, and of endotoxins as vaccines in place of sterilised cultures, as suggested by Professor Hewlett himself, are also discussed. A section is devoted to a consideration of some of the numerous tuberculins and their use in diagnosis and treatment. The employment of tuberculin and mallein for the diagnosis of tuberculosis and glanders respectively in cattle is also fully described. A new feature in this edition of Professor Hewlett's book is a chapter on the use of sour milk, in which the *rationale* of its employment therapeutically is given.

We can recommend this little book as a handy, useful, and interesting work upon an important new subject.

Einführung in die Experimentelle Therapie. Von Dr. MARTIN JACOBY, Biochemisches Laboratorium am Krankenhaus Moabit, Berlin. Mit 9 kurven und zahlreichen tabellen. Berlin: Julius Springer. 1910. Pp. 180. Price, M.5, paper; M.5.80, bound.

Dr. Jacoby's contribution is regarded by himself as a supplement to the text-books on pharmacology, on experimental pathology, and on the doctrine of immunity, including "serology," but it does not include clinical therapeutics as they are practised at the bedside. The emphasis is on the word "experimental," while the book itself deals chiefly with the results of observations made on animals. The scope of the work includes a wide range of subjects, perhaps far wider in some directions than might seem to be included under the title. The author deals with what he calls "chemically-antagonist therapy"—e.g., the effects produced by the "exhibition" of mineral acids in rabbits and dogs and the antagonistic-therapeutic healing effects of alkalies, the antagonistic action of hydrocyanic acid and certain sodium thiosulphur compounds, the effect of hæmorrhage, of transfusion of blood, and of the free inhalation of oxygen to combat poisoning by carbon monoxide.

Then follows functionally antagonistic therapy—e.g., physostigmin *versus* kurarin, muscarin *versus* atropin, and so on. Under the term "substitution-therapy" (pp. 18–38) we have such diverse subjects as the effects produced by feeding growing animals with food poor in lime salts, as practised by Aron, or iron compounds, and the methods of combating the results. It is an easy stride to thyroid and parathyroid-therapy, and another stride to the actual transplantation of an organ or a tissue, including an account of the researches

of Carrel and Guthrie and Unger and Stich on the transplantation of the kidneys. So far, muscle and nerve have not been successfully transplanted, and perhaps the reason is not far to seek. It is doubtful if full recognition is assured as to the prolonged independent viability, or what one may call the post-mortem "survival," of tissues and organs provided proper aseptic precautions and a low temperature are ensured. The experiments of Kuliabko on the recovery of the beat of the heart post mortem attest this as regards that organ. It appears, however, that a whole joint may be removed from a body 12 hours after death, be kept for 24 hours in normal saline under chloroform water, and be successfully transplanted.

It would take us into too wide a field to deal with what the author calls "Antiparasitic Therapy" (pp. 39–108), which he deals with under three heads: (1) Immuno-, (2) Sero-, and (3) Chemo-Therapy, the last a term coined by Ehrlich. In (2) anaphylaxy is not included. Perhaps some of the statements given under (3) will attract attention—e.g., the distribution of iodine, salicylic acid in the body, the effect of certain arsenical compounds (Laveran and Mesnil) on the trypanosomes (mouse), the limitations of the use of atoxyl in sleeping sickness, the treatment of syphilis in monkeys and rabbits, since it has been shown how readily the spirochete develops on the cornea. The effects of various coloured azo-compounds constructed and investigated by Ehrlich and his pupils in trypanosomiasis are described, and possible therapeutical applications foreshadowed. The therapy of neoplasms, inflammation, diseases of the blood, diabetes, gout, fever, disturbances of the circulation and intestinal tract, and finally, of fatigue (pp. 109–171) are rapidly passed in review. We would call attention to Reichert's recent (1910) use of the injection of adrenalin in certain malignant tumours.

There is a great deal of information presented in this book which is well worthy of study, not only by pharmacologists, but also by physicians. The author takes a wide grasp of "Bios" in its relation to the healing art, more especially from the chemical side—i.e., the bio-chemical side. Everything points to the growing importance of what is called "Bio-chemistry," a subject which, if taught properly, rapidly enlists the attention of medical students. This excellent and suggestive compilation is well worthy of perusal.

A Text-book of Bacteriology: A Practical Treatise for Students and Practitioners of Medicine. By PHILIP HANSON HISS, Jun., M.D., Professor of Bacteriology, College of Physicians and Surgeons, Columbia University, New York City; and HANS ZINSSER, M.D., Associate Professor in Charge of Bacteriology, Leland Stanford Junior University, Palo Alto, California. With 156 illustrations in the text, some of which are coloured. London and New York: D. Appleton and Co. 1910. Pp. 745. Price 15*s.* net.

THE practical applications of bacteriology as a result of the scientific study of the biological properties of bacteria have become so numerous and of such importance, not only in regard to medicine but also in connexion with sanitary, agricultural, and industrial problems, that this subject forms one of the most interesting and valuable branches of biology. In regard to medicine, we need not dwell upon the insight which bacteriology has afforded into many of the problems of disease, or point out how it has yielded methods of diagnosis and treatment of great value, and the promise of even greater benefits. The book before us may be recommended both on general scientific and medical grounds. It is written in simple and readable style, well produced, and copiously illustrated, the illustrations being in most cases reproductions of photographs or micro-photographs.

The first section deals with the general biology of bacteria and the technique of bacteriological study. The general morphology of bacteria, their modes of reproduction, their nutrition and classification, are discussed. The preparation of culture media and the methods of culture are described, and full directions are given for applying them practically. The various methods used in studying and staining bacteria are next considered. In this first section, which is largely introductory, the properties described are illustrated by reference to bacteria of various kinds, including not only pathogenic organisms but also the various nitrifying bacteria. The destruction of bacterial organisms and the general principles of disinfection and sterilisation are reviewed, and the methods of testing the efficiency of disinfectants are considered.

Infection and immunity are dealt with in the second section, which forms an interesting and critical review of these complex and important subjects. After some general information in regard to the problems of pathogenicity and infection, the defensive factors of the animal organism, in so far as they are at present known, and the general characters of antibodies are outlined. Toxins and antitoxins are then discussed in detail, and the results of Ehrlich's studies upon diphtheria antitoxin are described. The practical production and testing of antitoxins are clearly set forth in a separate chapter. Lysins, agglutinins, precipitins, and other antibodies are discussed, and the evidence upon which their existence is based is dealt with. Ehrlich's side-chain theory and its adaptations are fully discussed, and diagrams in illustration are given. The views of Arrhenius and Madsen and of Bordet in opposition to those of Ehrlich are also critically presented. Many important questions, such as the nature of the various antibodies, and of complement, the existence of anticomplements, anti-amboceptors, and complementoids, are all referred to. The phenomenon of the deviation of complement and its application in the Bordet-Gengou reaction are carefully explained. The technique of serum reactions and their practical applications are dealt with in sufficient detail to be thoroughly practical. Agglutination, precipitin, bactericidal, bacteriolytic, and hæmolytic tests are described in illustration, and then the Wassermann reaction for the diagnosis of syphilis is given, together with full details of all the substances necessary for its performance and the manner of using them. The importance of effective controls is emphasised. Certain modifications of this test are also briefly outlined. An interesting chapter on phagocytosis leads up to a discussion of opsonins, leucocyte extract, and aggressins. The difficult subject of anaphylaxis or hypersusceptibility, which has recently attracted so much attention, is presented clearly and fully, together with the theories advanced to explain its occurrence, so that a great deal of useful information is included within the compass of a short chapter. This section concludes with a general survey of the facts and problems of immunity.

The third section is devoted to an exhaustive description of pathogenic micro-organisms. In connexion with each one, the history of its discovery, its morphology and staining reactions, its cultural and other biological characteristics, and its pathogenicity are fully described, and numerous illustrations are given. The formation of toxic products and the results of immunisation observations, both in man and animals, are discussed at length. The diseases caused by spirochætæ are included and the methods of demonstration of the different organisms are fully described. The higher bacteria, yeasts, and hyphomycetes are also dealt with in this section, which is wholly admirable. Diseases of unknown etiology—viz., rabies, small-pox, acute anterior poliomyelitis, yellow fever, and certain other maladies are described in a separate section, in which the most important recent work upon these conditions is included. Bacteria in

air, soil, water, and milk, and the use of bacteria in certain industries are briefly discussed in a short concluding section. Separate indexes are given of authors and subjects, and references are given in footnotes on each page.

This is a very valuable book, and one we can cordially commend both as a text-book and as a work of reference.

On the Determination of the Chief Correlations between Collaterals in the case of a Simple Mendelian Population Mating at Random. By E. C. SNOW. Proceedings of the Royal Society, B, Vol. lxxxiii. 1910.

Mr. Snow has taken the case of a population exhibiting an allelomorphic pair of Mendelian characters of the simplest order, a population thus composed of individuals of three kinds—namely, pure dominants, pure recessives, and hybrids exhibiting in their persons the dominant character, but bearing both dominant and recessive gametes. He has assumed that the mating is at random, there being no tendency for like to mate with like, and has deduced by means of laborious algebraical processes what the correlation coefficients would be between brother and brother, cousin and cousin, uncle and nephew, and so on. In considering pairs of collaterals of each different degree the correlations between them both with regard to the somatic characters and the gametic characters are dealt with. In the first case, the individuals can only be divided into two classes, each exhibiting either the dominant or the recessive character, the hybrids being classed with the dominants, but in the second case a third division must be made for them. The gametic correlations are unaltered by the relative frequency of occurrence of either the dominant or recessive character among the population, but the somatic correlations are affected by this factor and may be smaller, but can never be greater, than the gametic.

It is curious and worthy of note that the gametic correlations deduced from a theoretical case like that considered agree much better with results obtained through biometric observation than the somatic correlations. This is illustrated in Table X., of which a portion is given below :—

—	Parent.	Grand-parent.	Sibling.	Uncle.	Cousin.
Mean of biometric results	0·498	0·273	0·529	0·265	0·267
Gametic correlation on Mendelian hypothesis ...	0·500	0·250	0·500	0·250	0·250

Another conclusion which should be taken into consideration by those medical men who examine family histories, either for diagnostic or life assurance purposes, is the high value of the correlation between first cousins. It is practically the same as that between uncles and nephews or grandparents and grandchildren; it follows therefore that where possible the cousins should be taken into account equally with the grandparents or the brothers and sisters of the parents.

International Clinics. Edited by HENRY W. CATTELL, A.M., M.D., Philadelphia, U.S.A. Vol. IV., Twentieth Series, 1910. London and Philadelphia: J. B. Lippincott Company. Pp. 308.

THE fourth quarterly volume for 1910 of *International Clinics* does not fall below the usual standard of this interesting periodical. Among the many articles which it contains we need only mention a few. The editor contributes a short, clear, and concise account of Ehrlich's "606" in the treatment of syphilis. Dr. Henry Pancoast has a further communication on the Treatment of Leukæmia by Röntgen Rays. Apart from what he calls "temporary symptomatic cures" the author claims no more at present for the X ray treatment of leukæmia than "an inhibitory influence whereby life has been prolonged for variable but definite periods of comparative comfort." Dr. Lewellys Barber's article on Blood Examination for General Practitioners contains some useful practical hints. Dr. Dorrance and Dr. Ginsburg attempt to revive transfusion in the treatment of hæmorrhage by a description of their vein-to-vein method. Mr. H. Tyrrell Gray contributes a useful paper on the technique, aims, and limitation of spinal anæsthesia in the young, which further supports the view advanced by him in three papers published in THE LANCET in 1909 and 1910. He contends that the main advantage of spinal anæsthesia lies in its influence on the prevention of surgical shock. Dr. Beckman's report of the surgical clinic at St. Mary's Hospital, Rochester, U.S.A., for July, 1910, contains material of value to surgical statisticians. In the Section of Neurology Dr. Victor Haberman contributes an interesting and thoughtful article on hypnosis, its psychological interpretation, and its practical use in the diagnosis of disease, drawn mainly from his experience in the Vanderbilt clinic. In a long article Dr. A. S. Warthin discusses the relation of thrombo-phlebitis of the portal and splenic veins to splenic anæmia and Banti's disease. The author refuses to regard these latter conditions as individual disease entities, and advances reasons for considering them merely as symptom-complexes and pathological complexes due to various causes. Dr. Warthin appends a very full bibliography of the subject of thrombosis and obstruction of the portal veins. Professor John Glaister's paper on the Law respecting Compensation to Workmen for Accidents in Great Britain and its Operation gives a fair summary of this matter. In his article on the Physician's Fees Down the Ages Dr. James Walsh has accumulated a mass of quaint information, and has brought to light the fact that for 5000 years physicians have been rewarded for their professional services, not according to the time or effort required, but according to an estimate of the benefits conferred on their patients. The volume concludes with an instructive article by Dr. William Wadsworth on Firearm Wounds.

The Veddas. By C. G. SELIGMANN, M.D. Lond., F.R.C.P. Lond., Lecturer in Ethnology in the University of London, and BRENDA Z. SELIGMANN. With 87 illustrations. Cambridge: The University Press. 1911. Pp. xx., 463. Price 15*s.* net.

THE Veddas of Ceylon are known to the student of ethnology as one of the most primitive of the existing races of mankind; but until lately their social and religious life has lacked thorough scientific investigation. The present volume by Dr. and Mrs. Seligmann is the outcome of a research expedition carried out under the auspices of the Ceylon Government, and it forms an important and attractive addition to the Cambridge Archæological and Ethnological Series. Since the Veddas are already small in numbers and are fast disappearing as a separate race, this investigation was urgently necessary if any authoritative record of their manners and customs was to be obtained. Physically, we learn that they are short, wavy-haired, and dolichocephalic, with moderately large faces and moderately broad noses. Although primitive they are by no means savage, and they possess many domestic virtues. They are organised into clans, and the family spirit is strong in the race. Among the wilder Veddas the family life "centres round the rock-shelters which are truly their homes." Even in a communal cave each family unit keeps strictly within its own limits, but food is often cooked by one woman for the community. The men are primarily hunters, although they sometimes help their womenfolk in the digging of yams. The Veddas, we learn, are strictly monogamous,

and as parents they are affectionate and indulgent, while in every respect the women seem to be treated as the equals of men, eating the same food, and, indeed, usually receiving the first share. Marriages take place almost exclusively between the children of brother and sister, and descent is in the maternal line. While the warmest affection exists between father-in-law and son-in-law, the mother-in-law, on the other hand, is rigidly avoided. Marriages take place very early in life, but divorce appears to be almost unknown. "Pregnancy is diagnosed after two menstrual periods have been missed. The change in the breasts is not noticed. Birth takes place in a cave ..... no screen is put up, and any woman will assist the parturient woman; the cord is cut with an arrow—the common tool used for all cutting purposes—and the after-birth is thrown away. The umbilicus is treated with cloth and ashes, and the portion of the umbilical cord which drops off is not preserved. We never heard of a case of twins. During labour the patient leans back with one shoulder or side supported by an angle of the rock, and a woman behind her supports her and presses down upon her shoulders. The woman remains in the cave for three or four days after the birth." Only a few cases of death during childbirth are on record among the tribes. The authors do not tell us much about disease in the Veddas, but when death follows sickness the body is often left covered with leaves in the cave where death took place. The chapters on religion, ceremonial dances, and invocations are exhaustive and deeply interesting. Dr. C. S. Myers contributes a chapter on Vedda music based upon phonographic records of songs obtained by the authors. The chapter on the senses of the Veddas shows that their colour perception is extremely keen, but save as displayed in their marvellous skill in tracking game their special senses are in no other way acute. In their conclusions the authors regard the Veddas as part of the same race to which belong the so-called Dravidian jungle tribes of Southern India. The subject matter of the book is well arranged; the style is clear and interesting; the illustrations are good; and the whole volume is a valuable contribution to ethnology.

LIBRARY TABLE.

Plant-Animals: a Study in Symbiosis. By FREDERICK KEEBLE, Sc.D., Professor of Botany in University College, Reading. Cambridge: University Press. 1910. Pp. 168. Price 1*s.* net.—This book is one of the manuals of science and literature that are issuing from the Cambridge University Press, and is not the least admirable of the excellent works in the series to which it belongs. Indeed, Professor Keeble has succeeded not only in making a notable contribution to the elucidation of the fascinating problems of symbiosis, but also in furnishing a book which is vividly interesting and easy of comprehension, even by those who have no previous knowledge of the questions with which it deals. The plant-animals, study of which forms the basis of the little book, are simple marine worms, Convoluta roscoffensis and Convoluta paradoxa, which are to be found on the foreshore of the sandy beaches in certain districts of Normandy and Brittany. The green patches which colonies of Convoluta roscoffensis make upon the sand will disappear at approaching footsteps, and close observation, coupled with infinite care, is needed for the capture and study of these primitive organisms. Such care and observation, as well as ingenuity in the devising of experiment, have been brought to bear upon his subject by Professor Keeble. The chapter upon the habits of convoluta is particularly strong evidence in support of this fact, whilst that upon the green cells shows also that the author possesses a wide biological knowledge as well as a cautious and scientific, in addition to an imaginative, mind. We recommend this little work to our readers, not only on account of the highly interesting facts relating to these lowly organisms which are demonstrated, but also because it shows how well a thorough and scientific study of the simplest living object may throw light on problems which are concerned with the life processes of so complicated a being as man.

An Introduction to Dermatology. By NORMAN WALKER, M.D. Edin., F.R.C.P. Edin., Physician for Diseases of the Skin, Royal Infirmary, Edinburgh. Fifth edition, with 43 coloured plates and 79 illustrations in the text. London and Edinburgh: William Green and Sons. 1911. Pp. 346. Price 12*s.* net.—The appearance of a new edition of this well-known work is an indication of its wide use. It is probably the most useful of all the smaller manuals on diseases of the skin, for it is specially adapted for those who are in general practice and for students who do not intend to devote special attention to dermatology. It is written in simple language and the subject is simplified so far as is possible. The usefulness of coloured illustrations in a work on diseases of the skin can hardly be exaggerated, and we are therefore glad to see that Dr. Walker has found it possible to add to the number occurring in former editions. They are very well done and give a clear representation of the lesions. We hope that the author will endeavour to prevent his work growing in volume; it is already larger than it was, and if it should become much larger it will have lost one of its most valuable properties, for the beginner in dermatology requires a small book.

Deutsche Zahnheilkunde in Vorträgen. Begründet von ADOLPH WITZEL. Heft 16. Zähne und Trauma, von Prof. Dr. WILLIGER. With 70 illustrations and 4 coloured plates. Leipsic: G. Thieme. 1911. Pp. 54.—This article on the Teeth and Trauma forms part of a work which has been appearing in Germany under the able guidance of Dr. A. Witzel. We have not had an opportunity of noticing the 15 sections that have already been published, but if we can judge them by the standard of this one, the work when completed should be of great value. In dealing with the question of teeth and trauma, the author commences by considering the defects of teeth arising from natural and artificial abrasion. In the chapter describing the injuries resulting from direct violence, the text is aided by an excellent collection of photographs and radiographs of the cases recorded, the radiographs showing the condition of the roots and alveolar process in two teeth that had been replanted being especially interesting. The four coloured plates illustrate in a clear manner certain pathological conditions of the dental pulp.

Pye's Elementary Bandaging and Surgical Dressing. With directions concerning the immediate treatment of cases in emergency. Revised and partly rewritten by W. H. CLAYTON-GREENE, B.A., M.B., B.C. Cantab., F.R.C.S. Eng., Surgeon-in-charge of Out-Patients, St. Mary's Hospital; Lecturer on Anatomy in the Medical School. Assisted by V. ZACHARY COPE, B.A., M.D., M.S. Lond., F.R.C.S. Eng., Surgical Registrar to St. Mary's Hospital. Twelfth edition. Bristol: John Wright and Sons, Limited. London: Simpkin, Marshall, Hamilton, Kent and Co., Limited; St. John Ambulance Association, St. John's Gate, E.C. 1910. Pp. 235. Price 2*s.*—This well-known manual, chiefly a re-issue of certain portions of Pye's "Surgical Handicraft," is primarily intended for the use of students when they begin their work in the wards and casualty room, and is perfectly suited to the purpose. It is, perhaps, a little too advanced for the use of nurses and members of ambulance societies, as many of the methods given are not those which it is advisable to put into the hands of persons not working under the direct

supervision of a surgeon. This warning seems necessary in view of the fact that it is one of the publications of the St. John Ambulance Association. Medical students can have no better or sounder guide to take them through the first years of their surgical training, and a testimony of this is the issue of this twelfth edition. It is a pity that opportunity has not been taken to rewrite the chapter on the treatment of drowning, for although it is stated that Schäfer's method of artificial respiration is to be preferred in these cases and the method is described, the whole treatment of drowning is dealt with as if Silvester's method (which is figured) were still recommended to be used.

Stanford's Indexed Atlas of the County of London, with Parts of the Adjacent Boroughs and Urban Districts. With a Preface by Sir LAURENCE GOMME. London: Edward Stanford. 1911. Pp. 159. Price, cloth, 7*s.* 6*d.* net; leather, 10*s.* 6*d.* net.—This sectional atlas consists of 84 maps, with an index map, a contour chart of altitudes, and a chart of the surface geology of the area covered by the maps. There is also an index to streets, squares, roads, terraces, places, lanes, railway stations, hospitals, L.C.C. fire-stations, the chief public buildings, &c., that fall within the limits of the map. It contains upwards of 12,000 names and fills 159 pages. We note the insertion of only one Midmoor-road, that in Wandsworth. Is there not one also in Wimbledon? This is the only slip, if it is one, that we have noted. The boundaries of the metropolitan boroughs and of the adjacent municipal boroughs, urban districts, and rural districts are marked in red; parks and open spaces are coloured green; water, blue; and roads along which tramways run, yellow. By a pale brown tint, continuous or broken, on either side of the streets it is shown whether the houses are terraced or detached, a useful piece of information to house-seekers. The preface contains much interesting and useful information. The work well sustains the reputation of the publisher as a cartographer, and can be highly commended.

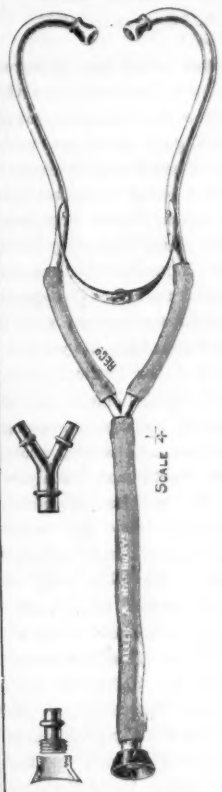
The Social Guide, 1911. Edited by Mrs. HUGH ADAMS and EDITH A. BROWNE. London: Adam and Charles Black. Pp. 252. Price 2*s.* 6*d.*—This is a useful book of reference to the social functions of the year, and should be especially appreciated by visitors to this country from other lands. The events of the year, with all necessary details, are arranged in alphabetical order and also according to the calendar. Several pages are devoted to the Coronation. The only seeming inaccuracy that we have found in the book is one for which we willingly pardon the compilers, who state that it is *customary* for ladies in *all* parts of *every* London theatre to remove their hats. The italics are ours; the optimism as to manners, the author's.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.—The next general or quarterly meeting of the association will be held at 11, Chandos-street, Cavendish-square, London, W., on Tuesday, May 23rd, under the presidency of Dr. John Macpherson, at 3 o'clock. Papers will be read on the Treatment of Puerperal Insanity with Antistreptococcic Serum by Dr. Nathan Raw, and on Pathological and Prolonged Sleep by Dr. Maurice Eden Paul, subsequent to which a cinematograph demonstration of some scientific films of general medical interest will be given. Members will afterwards dine together at the Café Monico Restaurant at 7 P.M. (Cost of dinner 7*s.* 6*d.*, exclusive of wine. Evening dress optional.) Dr. C. Hubert Bond, the honorary general secretary, announces that he will be much assisted in arranging the programme for the annual meeting if members desiring to read papers thereat will kindly communicate with him as soon as possible at 11, Chandos-street, Cavendish-square, London, W.

New Inventions.

AN IMPROVED STETHOSCOPE.

Messrs. Allen and Hanburys of Wigmore-street, London, W., have made for me the stethoscope shown in the accompanying illustration. The improvements claimed are that it is mathematically and physically correct throughout. The combined sectional areas of the two smaller tubes are equal to the sectional area of the larger tube. There is no widening or narrowing of the lumen of the tube from chest-piece to ear, and therefore nothing to interfere with the sound waves. This is achieved by the following methods. The worm on the chest-piece is external; the diameter of the rubber tube is the same as that of the proximal end of the chest-piece; the latter has a knife edge, so that the constriction which ordinarily occurs immediately beyond the attachment of a rubber tube to a rigid tube does not take place; the three orifices of the "Y" tube have also knife edges. There is no lessening of the calibre at the junction of the tube and ear-piece. The opening of the latter is slightly larger than that of the tube, so that when placed in the ear there is no choking. The advantages of the instrument are that all exaggeration of the sound, and also any accentuation of a component of the sound beyond another are avoided, and the exact sound produced is conveyed to the ear. Moreover, adventitious sounds are excluded with great ease. This is particularly noticeable in listening to the breath sounds. The convenience of the single tube is very great. If the test recommended by Hutchison and Rainy in their "Clinical Methods" be applied, it will be found that the intensity of the sound—the ticking of a watch—is at least double that of an ordinary binaural instrument. I have to express my indebtedness to Mr. Lewis, of Messrs. Allen and Hanburys, for his courtesy and his interest in the designing and completing of the instrument.



Oxshott, Surrey. T. C. BLACKWELL, M.D. Edin.

THE PURIS SYPHON.

THE complete exclusion of metallic fittings from the head of the familiar soda syphon is, of course, a distinct hygienic gain. The head of the "Puris" syphon is made entirely of porcelain, and the way in which it acts, both to seal and to deliver the water, is ingeniously simple. There are no levers or springs, the water being delivered simply by pressing a knob which is not unlike in size and shape an electric bell push. The valve is an ingenious device consisting of a rolling ring which covers and uncovers the ports of the valve, acting automatically with the assistance of the back pressure within the syphon; and the great simplicity of the syphon head, which is practically in two parts, is a material feature of the invention, enabling the syphon to be taken to pieces in a few seconds and re-fitted complete within half a minute, so that the syphons can be thoroughly washed out when required. A specimen of this syphon head was submitted to us by Messrs. Rayner and Co., of 37, Chancery-lane, London, W.C.

THE LANCET.

LONDON: SATURDAY, MAY 20, 1911.

The National Insurance Bill.

(*For a Special Note on Mr. Lloyd George's intentions see page 1397.*)

THE numerous articles and letters which have appeared in the press during the past week in comment upon the National Insurance Bill seem to show that the consensus of approval expressed at first holds good after the more mature consideration which the publication and widespread sale of the Bill have allowed. But as far as the medical profession is concerned there is much of the apprehension which is vigorously expressed in an interesting letter on page 1330 of this issue of THE LANCET. This has not been allayed by any general belief that the Chancellor of the Exchequer intends to obtain for medical men a distinctly better standard of remuneration than has yet been received by practitioners from any of the medical clubs, while the absolute resolution of medical men not to be left to the mercies of the friendly societies is growing in force—as it should. Our correspondent, writing above the title "Twenty-four Years a Practitioner," analyses with clearness and simplicity the position in which a large body of general practitioners may find themselves unless substantially higher returns from contract practice should be obtained under the Bill, and we need not do more than refer our readers to his communication so that they may appreciate how badly hit many of the medical profession will be unless the proper increase of payments takes place for which we have every ground to believe that the Chancellor of the Exchequer is providing. There is undoubtedly good reason for the medical profession remaining alert to secure what has been promised—namely, distinctly better terms than are implied in any such capitation fee as 4*s*.—for the officials of the friendly societies are in some cases affecting publicly to believe that 4*s*. is the maximum sum which the medical profession will be offered. We have, for example, a local secretary of the Independent Order of Oddfellows blessing the Bill in an evening paper of fine repute and Government politics as a good and comprehensive scheme, saying, "In the Government scheme doctors are to receive 4*s*. per member per annum exclusive of drugs"; and lower down in the same article the secretary is represented as adding, "It is evident that doctors are to receive 4*s*. per member per annum for their services." Nothing of the kind is stated in the Government scheme, and nothing of the sort is evident from the Chancellor's words; but if the friendly societies take up this attitude it is not surprising that many medical men are compelled to regard the Bill as a terrible threat to their pecuniary position; while the need for the institution of some central council on which medical representatives will occupy a proper place becomes apparent, for if medical men are placed in a subservient position to the officers of the friendly societies, it seems at least probable that the terms which they will be offered will be those which the public is now being wrongly assured are the intentions of the Chancellor. Possibly an early opportunity will be taken by the Chancellor of reminding the friendly societies that any such words as those which we have quoted above form a misreading of his avowed ideas. The great dislocation of medical practice that must occur under the scheme—the inevitable fact that while the medical profession as a whole may receive about the same money (some think even more) certain members of the profession will receive much less—makes it inevitable that we should regard the measure anxiously. It is clear to us that the general feeling among our readers is one of desire to fall in with the scheme, and thus to put an end to a series of long-standing quarrels that have profoundly troubled the relations which exist between medical men and the public. But only on two conditions. Relations with the friendly societies must be safeguarded and individual contracts properly drawn and supervised; while the insured patients must be allowed upon reasonable terms a choice of medical attendant. There is a wish in many places to establish the principle of payment for work done in place of the system of contract practice, but that wish has not yet taken shape in a concrete scheme that agrees with the provisions of the Bill, and in this direction we see very grave difficulties. The principle can hardly be adopted in a Government scheme, but plans to give effect to it might be set in motion by local arrangement among medical men.

The effect of the National Insurance Scheme on pharmacy has to be considered in connexion with the terms that will be offered to medical men under the Bill, because the position of the pharmacists may be identical with that of medical men, for the Chancellor and his collaborators are not likely to alter their opinion as to the necessity of divorcing prescribing from dispensing. The National Insurance Scheme is regarded by pharmacists with some apprehension, though they may be reluctant to criticise at this stage proposals which appear to be so generally popular. As a body they express no desire to make capital out of charity, but they are anxious that charity should not be done at the expense of themselves. When Mr. LLOYD GEORGE, in expounding the scheme in the House of Commons, explained that "the doctor's business should be confined to prescribing, and it is for the chemist to dispense," pharmacists saw in the scheme the realisation of old ideals, but any enthusiasm which may have been aroused was checked by the further statement of the Chancellor that he had no doubt the friendly societies would make "as good a bargain with the chemists as they had done with the doctors." The Bill itself contains no mention of pharmacists, and the sub-clause which relates to dispensing merely provides that friendly societies and health committees "shall make provision for the supply of proper and sufficient drugs and medicines to insured persons," and that no arrangements for such supply shall be made with a medical practitioner at an inclusive fee except in special circumstances. In view of the anomalous condition

of pharmacy law this provision appears inadequate to secure that the dispensing of medicines for insurance patients should be done by pharmacists. Dispensing does not necessarily entail a sale, and under the Pharmacy Acts it is the sale of a poison by an unqualified person and not the dispensing of it which constitutes an offence. There is therefore nothing in the Bill which would prevent societies from making arrangements for the dispensing of medicines by unqualified persons, and such dispensers need not be under the supervision of registered medical practitioners or pharmacists. It is perhaps improbable that societies would make such slipshod or irregular arrangements, but the experience of pharmacists of the effects of loosely worded measures of legislation has been so unfortunate in the past that they are doubly anxious to be safeguarded from a similar experience in the future. Let it be assumed, however, that some clear amendment will be made for the dispensing to be done by qualified persons: this would not necessarily mean that pharmacists in business would be employed for that purpose, for friendly society officials have already indicated that they are considering the question of establishing a central drug depôt and branch dispensaries for the supply of medicines to insurance patients. If this project is carried out it will be disastrous to a large proportion of pharmacists now in business, especially those in working-class districts.

The practical difficulty of separating prescribing from dispensing is not settled either because their divorce of functions is considered scientifically sound or because the decree has been pronounced in the Bill. Many practitioners would much prefer to do their own dispensing; many patients will find the new arrangements, whatever they are, irksome; and in many forms of practice the loss of the dispensing for club patients will make dispensing for private patients more difficult. The fact that in other countries the work of the dispensing chemist is never done by the medical practitioner is of great significance, but we cannot help thinking that the awkwardness of defining what is dispensing must have made itself felt before now in those countries. If, for example, a surgical emergency requires splints and bandages, who provides them under the Bill? Consideration of such a point as this brings us face to face with the fact that a close definition is required of what is a medical benefit under the new legislative proposals. We take it that in the actual contracts such matters as the treatment of accidents and of complicated midwifery cases, night calls, and long journeys will be made the subject of schedules, and upon the proposals for these payments medical opinion ought to be heard. Would it not be well if our great medical corporations and our degree-granting universities made an attempt, late in the day as it may be, to coöperate upon some general principles, to ascertain the views of their Members, Licentiates, and Graduates, and to present to public view the position in which the medical profession believes that it should be placed? With some such idea a unanimous resolution of the Royal College of Surgeons of Edinburgh has resolved to petition the Government for a reasonable delay in the passage of the Bill.

The Reconstruction of the University of London.[1]

THE thanks of all those interested in the higher education of London are due to Sir WILLIAM ALLCHIN for the work he has done in presenting a full and accurate account of the reconstruction of the University of London. The first part appeared some time ago and brought the story up to the appointment of the first Royal Commission on the University in the year 1888; the second part details the negotiations that took place with regard to that appointment, and describes the progress of events up to the rejection by Convocation of the scheme brought forward by the Senate in 1891. Although the time comprised within this volume is therefore hardly more than three years, it was a time of activity, when much work was done in the investigation of the conditions then existing and in the bringing forward of many and widely varying proposals for their amelioration. Large as this volume is, it was needed for the adequate description of all that took place. In May, 1888, in response to the demand for a teaching university in London, a Royal Commission was appointed to investigate the existing conditions and to make recommendations; it contained seven members, one of whom, however, the Hon. G. C. BRODRICK, attended only one meeting, and therefore took no real part in the matter. The names of the commissioners are sufficient to show that care had been shown in their selection, for they were the Earl of SELBORNE, a Lord Chancellor, the Right Hon. J. T. BALL, a Lord Chancellor of Ireland, Sir JAMES HANNEN, Sir WILLIAM THOMSON, afterwards Lord KELVIN, Sir GEORGE STOKES, and Dean WELLDON, then headmaster of Harrow, and later Bishop of Calcutta. It will thus be seen that half of the working members of the commission were eminent members of the legal profession, while the other three were actively engaged as teachers. It will be noticed, however, that not a single representative of the medical profession was called to serve on the commission, whether connected with the University or not, although the question of the granting of medical degrees to London students was one of the more important matters which had given rise to the existence of the commission.

The problem of the granting of medical degrees in London is of such intricacy that it is hardly possible for anyone not thoroughly conversant with the facts to attempt to solve it merely from the evidence supplied to this or any Royal Commission. Representatives from many bodies gave evidence before the commission, and especially may be mentioned the witnesses from University College and King's College, who advocated the establishment of a teaching university in London. We refer our readers to the admirable summaries of the evidence submitted by Sir WILLIAM ALLCHIN, reminding them that the essential question at issue was whether or not there should be established in London a second university, where academic training, in certain metropolitan colleges and schools providing teaching and university life, was

[1] An Account of the Reconstruction of the University of London, compiled by Sir W. H. Allchin, M.D. Lond., F.R.C.P. Part II., From the Appointment of the First Royal Commission to the Rejection of the Scheme of the Senate by Convocation, 1888-1891. Price 5s.

a necessary precedent to examination for degrees, while the examinations were to be conducted by the teachers in the recognised colleges, together with external examiners, representatives from the Royal Colleges of Physicians of London and Surgeons of England being placed on the governing body. It is true that there was also a petition of the Royal Colleges for the power of granting the degree of M.D. in order to meet the demand of the London medical students for a medical degree on terms similar to those granted to students by other universities in the kingdom, but this petition occupied only a secondary place in the proceedings. The report of the commission was presented about a year after its appointment. It was a lengthy document, but it may be summarised as rejecting almost unceremoniously the petition of the Royal Colleges, while it recommended that the existing University should within a reasonable time endeavour to make such alterations in its procedure and constitution as would meet the main points contended for both by the Royal Colleges and by those who desired the establishment of a teaching university. During the next year the University of London endeavoured to come to terms with University College and King's College, and the Senate drew up a scheme which was provisionally accepted by those colleges and by the Royal Colleges of Physicians and Surgeons. A little later University College and King's College withdrew their adhesion to the new scheme, but it was finally and utterly damned when the draft supplemental charter was presented to the Convocation of the University of London and was rejected by 447 votes to 197. Thus an attempt made with the best intention on the recommendation of a Royal Commission to solve a problem of the higher education of London failed miserably. The Senate of the University, with an anxious endeavour to please all parties concerned, had devised a scheme that satisfied none. It endeavoured to unite incompatibles, and necessarily it failed; but the primary cause of the failure was to be found in the constitution of the Commission. The medical profession was unrepresented, and sufficient attention was not paid to the needs of London medical students.

The difficulties which existed at that time remain with us at present. Now, as then, it is not possible for the average medical student with average ability and average diligence to attain the degree of M.D. in London, and this is clearly demonstrated by the large number of London students who go elsewhere for their degrees. Into the merits of the scheme formerly advocated by the Royal Colleges we need not now enter, for that scheme is no longer put forward by those Colleges; but the fact remains that, in spite of the changes made in the University, in spite of the softening of the matriculation and the alleged weakening of its other examinations, the conditions imposed are still too hard for the average medical student. Nor are we attempting to discuss the difficult question whether the candidate at an examination should be examined by his own teacher or by a stranger. But the true basis of the agitation for the establishment of a teaching university in the metropolis has been the need felt by teachers that they should have the control of examinations. The evil which was then flagrant was that teachers of the highest rank were compelled to instruct their students according to schedules drawn up by others, often much less acquainted with the needs of the student, and the result was to embarrass considerably those who had to teach. Something has been done to remedy this grievance, but we are by no means convinced that anything like the present arrangement in London can endure. Modifications are demanded both by teachers and by students, and the medical profession is not alone in awaiting with interest and anxiety the findings of the Royal Commission at present investigating the question of the higher teaching in London. To all concerned in this matter, whether commissioners or witnesses, it is essential that they should know what has been done in the past, and nowhere else can be found so satisfactory an account as that put forward by Sir WILLIAM ALLCHIN.

Physiological Albuminuria.

THE recent discussion at the Medical Section of the Royal Society of Medicine, reports of which we published in our columns on April 29th (p. 1134) and on May 6th (p. 1205), has once more drawn attention to the vexed question of "physiological albuminuria." The late Sir WILLIAM ROBERTS was one of the first observers to use this term. It naturally implies that the appearance of the albumin is not indicative of any morbid condition, but it gives no suggestion as to the precise condition of the phenomenon. As is well known, the albumin is found under varying circumstances. It is, as a rule, not constant; it may only be present on first rising in the morning, after a cold bath, after meals, or after severe exercise. Hence, as alternatives to the word "physiological," the terms intermittent, dietetic, postural, cyclic, orthostatic, and functional have been employed. The expression "hæmatogenous albuminuria" has been adopted by some observers, based upon the researches of Sir A. E. WRIGHT and Dr. E. A. ROSS, who maintain that the albuminuria is due to a condition of the blood, in which the power of coagulation of that fluid is lowered, or in which there is some change in the albumins of the serum, or in the acidity which influences the coagulability.

Some authorities were at one time of the opinion that albuminuria was always pathological, but the remarks of the various speakers in the discussion to which we have alluded clearly show that "physiological albuminuria" is now an accepted fact. The expression "albuminuria occurring in adolescence" was generally adopted rather than one of the terms we have mentioned, as it is rather in this period of life that the condition is usually met with. Dr. J. F. GOODHART, who opened the discussion at the Medical Section of the Royal Society of Medicine, gave an account of the after-histories of a large number of cases of "adolescent albuminuria" which had come under his notice. In addition to the causal factors that have been already mentioned, he suggested wounding of the passages by the transit of oxalates, uric acid, and phosphates. He also believes that rapid and inordinate growth of young people may have a determining influence. Food-bolting, in his opinion, may also be responsible for some of the cases. He expressed the opinion that albuminuria of the adolescent had no sinister effect upon health or upon the duration of life.

Mr. H. G. ARMSTRONG, medical officer to Wellington College, thought that if a "urinary census" were to be taken at any large public school it would be found that 15 per cent. of the boys were passing albumin in the urine, and Dr. CLEMENT DUKES (consulting physician to Rugby school) stated that out of 1000 boys examined he found 157 were passing albumin in the urine, and he was sure that those cases did not pass into organic disease. Dr. SAMUEL WEST alluded to the high frequency of "functional" albuminuria noted by some physicians. He thought that this large number was due to two facts: first, the inclusion of cases in which albumin followed muscular exertion; and secondly, to the methods of detection employed. Doubtless the latter point requires attention. Before any definite or reliable statistics can be drawn up the tests employed must be made uniform. In a large number of the reported cases the quantity of albumin present was infinitesimal, and would probably be overlooked in ordinary examination. Some of the tests might be deemed too delicate for ordinary clinical practice. For all practical purposes boiling the urine and adding acetic acid, or the cold nitric-acid test, would be accepted as conclusive, and if all the observations were made on this basis the number of cases classified as those of functional albuminuria would be considerably reduced.

The subject is a very important one, and resolves itself into one of correct diagnosis which can only be arrived at after prolonged observation and careful study of each individual case. Certain tests have been proposed to distinguish physiological from pathological albuminuria. In a number of cases it has been found that the albumin disappears from the urine after one or two doses of calcium lactate. In a discussion which took place at the Life Assurance Medical Officers' Association in 1906, Dr. R. HINGSTON FOX recorded his experience in this matter, and cited several cases which fully satisfied him as to the effect of the calcium salt in controlling the transudation of albumin. The presence of casts in the urine may yield evidence which is of value in the differential diagnosis. If numerous granular and epithelial casts are found, then nephritis is undoubtedly present, but if only hyaline casts are seen, then the albumin may be of a functional character; the absence of casts, however, does not exclude disease of the kidney, as these bodies are not always present in such conditions. This difficulty in distinguishing between the two classes of albuminuria is especially experienced in examination for life assurance and for posts in the services and for positions in mercantile houses. Physiological albuminuria having been definitely accepted, it is obvious that those individuals exhibiting this phenomenon ought not to be excluded from the advantages of life assurance, or from entering the services, or from clerkships in banks and other public and private offices. But a very real difficulty lies in recognising the true state of affairs, and unless each case is watched for some time and frequent examinations of the urine are made the medical adviser to an insurance company naturally hesitates to accept an individual for insurance at ordinary rates if albumin has ever been detected in the urine. The occurrence of albumin in athletes or in those who have undergone a prolonged strain in preparing for examinations does not as a rule present such difficulties. Rest from exacting muscular effort, a holiday, and relaxation of severe mental effort will probably have the desired effect in freeing the urine from albumin and indicating its transitory appearance. Unless such precautions are taken, a too hasty conclusion may be formed as to the presence of structural disease of the kidney and so undue interference with a career or a method of living may be inflicted and unnecessary anxiety may be caused. Careful observation will in most instances enable a correct decision to be arrived at, so that a just course of action is usual under thoughtful directions; but it is useless to deny that the tendency to take a too serious view of the symptoms was at one time general.

Annotations.

"Ne quid nimis."

OPEN-AIR SCHOOL FOR TUBERCULOUS CHILDREN AT BARNSLEY.

WE have received a very interesting report[1] on the experiment made last year by the Barnsley education committee in starting an open-air school for tuberculous children on the model of the open-air school already existing in Bradford. The school ran from June 6th to the end of October, with results so encouraging as to inspire the hope that before many years have passed such schools will be considered as necessary as the special schools for blind, deaf, and defective children are at the present time. At this juncture, when the State and municipal care of the sick and defective share with educational questions in general a great part of the attention of serious citizens, the contents of this report deserve close scrutiny. The medical requirements for an open-air school are set out in the report to be as follows:—

1. The children must be all day in the open air.
2. The children must have a suitable diet.
3. The children must rest for two hours in the open air after dinner.
4. Each child must have a shower bath twice a week.
5. The children must be under skilled supervision for as much of the day as possible.

The children at such an open-air school must be kept all day at the school, which obviously would have to be a more or less specially constructed building. Accordingly, a suitable building was found by the Barnsley authority and adapted. The building, a deserted political club, was cheap, but neither in site nor construction was it ideal for its new purpose. Considerable modification and an instalment of shower-baths, however, made it roughly suitable. Meals could be served to the children in an open-air dining-room, and two classrooms and two playrooms, by removing walls and windows, were made open to the air. The sanitary and cloak room accommodation was found to be ample. The school was opened on June 6th, and up to July 18th the nourishing food provided—"lib. pot," suet puddings, Irish stew, jam roll, boiled fish, stewed fruit, rice, and vegetables—did not produce its expected result, but from that date the increase in weight of almost every child was most satisfactory. No sensational increases were looked for, as none of the children on admission were underfed, though all save one, who had bronchial catarrh, showed definite signs of pulmonary tuberculosis. The total number of children admitted for part, or all, of the period during which the school was kept open was 46—20 boys and 26 girls. All these children attended for at least 3 weeks, returning home for Saturday and Sunday.

[1] Report on Queen's-road Open-air School at Barnsley, by F. J. Sadler, M.B., B.Ch., D.P.H. Oxon., school medical officer, and W. P. Donald, barrister-at-law, secretary.

5 children attended over 3 weeks only, 6 over 2 months, 35 for 5 months, these 14 boys and 21 girls attending practically all the time the school was open. "In 21 cases," says the report, "it was impossible at the end of the attendance to detect any defect of the lungs at all." "In 24 cases there was definite—indeed, very satisfactory—improvement in the condition of the lungs." In one case only was the condition of the lungs unaltered, but the child grew in height, increased in weight, and improved in chest expansion. When it is remembered that all the children but one admitted had definite signs of phthisis these figures are eloquent of success. Dr. Sadler's medical report is supplemented by Mr. Donald's notes on the administrative aspect of the experiment. It is estimated that the cost of a second year's experiment, allowing for a reduction in the rent of buildings and a non-recurrence of certain heads of capital expenditure, would be about £35 for each month the school is open. The gross cost to the education authority in 1910, including £50 paid for the building, was £243 19*s.* 10*d.* A charge of 2*s.* 6*d.* per week per head was paid by the parents of the children, with a few exceptions, and the sum received covered the cost of food but not the cooking. The school required two teachers, a school nurse, and a housekeeper who cooked and served the food, and Mr. Donald notes that the success of the school was largely due to the whole-hearted enthusiasm of this staff. The report, in addition to showing the working expenses and the details of the parents' contributions, has appendices dealing with the quality and quantity of food provided, with the duration of the classes, and with the increase in weight, height, and chest expansion of each child during the time of school attendance. A most interesting record of observations made at fixed intervals in respect of each child by the head mistress will be found in Appendix D; these observations may readily be compared with the medical officer's record, and prove the value of the work done. Mr. Donald, in summing up the experiment as a whole, says: "It can fairly be claimed that in so far as its aim was to produce 'a healthy mind in a healthy body' it has been eminently successful, and the experience gained will be of value to the committee in the work of the elementary schools of the borough as well as in the narrower field of the education of defective children." We congratulate the Barnsley education committee and their officers on a truly useful piece of work. We hope that the experiment will be undertaken again this year on a larger scale, when, if a proportionate success is obtained, similar open-air schools will surely be started by other authorities.

THE EFFICACY OF ANTISEPTICS.

THE problem of the relative efficacy of various antiseptics cannot be entirely settled by experiments *in vitro*, for it is certain that to a very great extent the conditions obtaining within the body are very different from those existing in a test tube. When bacteria are subjected to the action of an antiseptic in a test tube they are not protected in any way except in so far as the outer layer of the bacterium serves as a protection. The same conditions do exist indeed when the bacteria are on the surface of the body or on the surface of an open wound, but these exposed bacteria form but a small part of those with which the surgeon has to deal. To attack and destroy those bacteria which have penetrated into the tissues the antiseptic also must be able to make its way through the tissues. This is a point which has not been fully considered, and therefore there was need for the investigation of the relative power of penetrating animal tissues possessed by different antiseptics. This investigation has been carried out by M. G. Seelig and C. W. Gould of St. Louis and published in the March number of *Surgery, Gynæcology, and Obstetrics*. They endeavoured to find how rapidly various antiseptics could pass through animal membranes as estimated by the destruction of some bacteria, and typhoid bacilli were used because the time necessary to produce sluggishness of motion and finally cessation of motility could be studied during the experiment. The membranes employed were celloidin and the mesentery, omentum, diaphragm, and skin of the rabbit. The celloidin was employed because it offered a very convenient method and one easily controlled, and the conclusions drawn from the experiments on celloidin capsules were for the most part closely similar to those resulting from the employment of animal membranes. As far as possible the tissues were employed in the living condition, though this could not be done in the case of the diaphragm. The method employed was as follows: A small glass vessel containing the antiseptic was taken and a piece of the membrane was laid over it and depressed in the centre so as to form a little cup, into which was poured a measured quantity of a broth culture of bacteria. The antiseptic could only affect the bacteria by passing through the animal membrane, and the time required to kill the bacteria was noted. The results may be summed up briefly thus: Most of the common antiseptics, such as carbolic acid and perchloride of mercury, were without effect even after 24 hours, though one exception deserves to be mentioned, a 5 per cent. watery solution of carbolic acid penetrated the diaphragm of a rabbit in five minutes. The two most effective antiseptics proved to be alcohol and iodine. The most effective strength of the alcohol was 95 per cent.; this is opposed to the hitherto generally received opinion that 70 per cent. alcohol has the greatest antiseptic power. Iodine was very effective even in watery solution, but the alcoholic solutions of iodine appeared to be even more effective. These results are of great interest, and they may prove to be of practical importance, but they will need to be carefully considered, for the osmosis in several of these cases is not a simple physical process, chemical changes tending to modify it greatly. Thus to mention only one instance, the power of the perchloride of mercury to combine with albuminous substances must interfere greatly with its osmotic equivalent. Nevertheless, it is true that this chemical interference occurs in actual use, and therefore to a great extent reduces the antiseptic value of perchloride of mercury in practice.

A CASE OF CHRONIC GLANDERS.

A CASE of this very puzzling disease, carefully observed and thoroughly investigated, is reported in the *Archiv für Schiffs- und Tropen-Hygiene* for April from Kiao-Chau, China, by Marine-oberstabsarzt (Fleet-Surgeon) Professor Dr. E. Martini and Marine-stabsarzt (Staff-Surgeon) Dr. Besenbruch. The patient, a gunner in the Marine Field Battery, slaughtered a sick horse in the beginning of April, 1910, and got a spurt of blood in his face. Whether some of it entered his eye he did not afterwards remember or if in washing his face it got in, for he did not at the time particularly notice the incident. On April 15th he shivered, thought he had caught cold when on stable duty, and the next day he reported himself sick, as his right eye was red and watering. He was sent to the hospital on the 18th, when both lids were swollen. There were conjunctival injection, lacrymation, and photophobia, and several small superficial ulcers were seen on the cornea (inner and upper quadrant). He was treated with yellow ointment; the ulcers healed, the injection faded, and the eye was well in the beginning of May, but a hard and tender swelling of the lymphatic gland above the left elbow had now appeared and

he began to suffer from pyrexia, remittent in character and even reaching 105° F., for which no explanation could be found, as all the organs and systems appeared normal on examination. In the middle of May there was marked tenderness above the right inner ankle, but no objective changes. On May 23rd the blood was examined and cultured; the leucocyte count was increased, 9200; the cultures remained sterile. In the end of May an œdematous swelling formed about the left elbow, materially restricting movement. The temperature became normal through June, except on the 6th and 7th, and the œdema over the elbow disappeared. On July 8th the patient felt unwell, his temperature rose to 101°, and he complained of pain in the right thigh, a hand's-breadth above the knee. Nothing could be seen there, and in a few days the temperature again became normal, where it remained for practically two months, though on July 19th he had a temperature of 102·5° at night, and a white blood corpuscle count of 9700. At this time almost all the glands were swollen, and the spleen was palpable below the costal margin. In the end of July a swelling formed in front of the right thigh in the painful area mentioned, tenderness increased in the end of August, and an abscess formed in the beginning of September. On Sept. 5th an exploratory puncture was made, and from the fluid withdrawn an organism was cultivated, closely resembling the bacillus mallei. Till now the disease had been suspected to be some rare form of sepsis, malaria, or syphilis. The abscess was opened up on Sept. 24th; no obvious pus was seen, but only bloody serum. The cavity was stuffed with iodoform gauze and had healed on Oct. 17th. The temperature rose again on the morning of Sept. 29th to 105° without obvious cause, but the patient complained of pain about the tuberosity of the right tibia, where there was nothing to be seen or felt. After Oct. 11th and onwards to January the temperature was almost always "tertian" in character, one day roughly normal, the next day rising at night to 102° more or less, and the patient lost weight and strength. He always complained of the pain about the tuberosity of the tibia, but nothing more than tenderness could be demonstrated. Nothing abnormal was seen on X ray examination on Nov. 14th; nothing could be cultured from the blood on the 19th; still on the 23rd fluctuation was felt. There was a brawny infiltration around the tuberosity on Dec. 13th, and though no pus was found on puncture bacillus mallei developed on the culture media. On Dec. 17th the abscess, which had increased to the size of a hen's egg, was opened, and thin brownish pus came out. Treated with iodoform gauze packing it had nearly healed on Jan. 3rd, when it was noted that the spleen and glands continued enlarged, and that the pyrexia still persisted with the same tertian character. The prognosis of glanders is recognised to be very uncertain; the patient may be worn out by the disease without any conspicuous lesion appearing, or he may be carried off by an acute exacerbation. Treatment by mercury and potassium iodide and by collargol has produced no satisfactory result. The injection of salvarsan is suggested. That is, however, as far as results are available, only proved valuable against protozoal infections, particularly against spirilla, though it has done good in trypanosomiasis and, according to Werner, in malaria. The bacillus which was cultured from the pus of the abscesses was a non-motile, pole-staining, Gram-negative bacillus, which, grown in nine culture media, gave the reactions of the bacillus mallei in all except litmus milk, in which tested again and again its growth remained always alkaline. It was pathogenic to guinea-pigs, and from their organs it could be recovered, though never in such numbers as in the pus of the abscesses. That it was never found in the blood of the patient is easily explained, as this bacillus does not grow in the blood itself but in the tissues only. Bacilli from cultures were agglutinated (macroscopically) by the patient's serum in 1 to 500 dilution; they were never agglutinated by the serum of other patients in higher dilution than 1 in 50, and this patient's serum never agglutinated other bacilli in a higher dilution than this same 1 in 50. Chronic glanders is already reported from China in the German literature, in which, too, glanders is reported as having developed from a lesion of the eye. Professor Martini and Dr. Besenbruch are to be congratulated on their very thorough investigation and their account of this important and interesting case.

A FORGOTTEN NATURALIST: DR. BENJAMIN ALLEN OF BRAINTREE.

FEW tasks are more grateful than the keeping green of the memory of worthy predecessors, and more particularly is this the case when the lives recorded were passed in the seclusion of an uneventful if fruitful life. The medical profession, therefore, is indebted to Mr. Miller Christy, F.L.S., whose paper on Dr. Benjamin Allen of Braintree,[1] a forgotten Essex naturalist, is before us. Mr. Christy first gives a brief sketch of two other contemporary Essex naturalists, with both of whom Allen was familiar—viz., the learned and illustrious John Ray (1627–1705), a pioneer in modern natural science, and Samuel Dale (1659?–1738), a physician and apothecary of Braintree. Allen's life was closely interwoven with those of these two. He was a son of Benjamin Allen, also a physician, apparently of London, and was born in Somersetshire, though there is no evidence to show where, or even when, but as he died in 1738 at the age of 75 his birth took place, if the age recorded is correct, in 1663. It seems probable that he belonged to the Allens, or Alleyns, a prominent Essex family, holding a baronetcy, for he appears to have been on terms of intimacy with the family. He was educated at St. Paul's School, under Mr. Gale, one of its most famous High Masters, and probably owed to Gale, who was an early Fellow of the Royal Society, his taste for natural science. He entered as a pensioner at Queen's College, Cambridge, in 1681, and while an undergraduate composed a part of his work on "The Chalybeat and Purging Waters of England," which was, however, not published until 1699. He took his M.B. degree in April, 1688, at the age of 24; but he appears to have been in practice for at least two years before that, for he refers in his commonplace book to a "Widow Robinson" as "the first patient I had, and I cured her, 1686." But little is known of Allen's early professional life, but it is likely that he was assistant to Dr. Joshua Draper of Braintree, whose daughter he later married, probably in 1695, and to whose practice he probably succeeded. Allen lived in the well-known "Great House," overlooking the Great Square at Braintree, a Tudor house, later faced with a Georgian front. The house still exists, but the lower part is now converted into shops. A close intimacy existed between Allen and Ray, and although their relations became strained later in life, probably in consequence of the fatal termination of an illness for which Allen attended Ray's daughter, Mary, towards the last they became quite cordial again. Allen discovered the winged glowworm, Lampyris noctiluca, and from his carefully recorded observations Ray established the fact that the winged glowworms are the males, the wingless ones being the females. It was towards the close of the seventeenth century that Allen first began to come into public notice as a naturalist, when some of his papers were read before the Royal

[1] Dr. Benjamin Allen (1663–1738) of Braintree: a Forgotten Essex Naturalist. By Miller Christy, F.L.S. Reprinted from the Essex Naturalist, vol. xvi., 1911.

Society on the introduction, probably, of either Gale or Ray. Among these may be mentioned papers on the Manner of Generation of Eels, with an appended note on the Malarial Agues (1698); An Account of the Scarabæus Galeatus Pulsator or Death Watch; and An Account of the Gall Bee. In 1699 he published his book on the "Natural History of the Chalybeat and Purging Waters of England, with their particular essays and uses, among which are treated at large the apoplexy and hypochondriacism, to which are added some observations on the Bath waters in Somersetshire." This is said to be practically the earliest systematic treatise on the medicinal waters of England; no fewer than eight Essex springs are described in it. Of all Allen's work, however, the greatest interest attaches to his "Commonplace Book," a large portfolio MS. volume, bound in vellum, and containing 367 pages, nearly all closely written on. This book, which is in the possession of the Rev. J. W. Kenworthy, formerly vicar of Braintree, is thus inscribed on the title page: Conclusions in several subjects (as Anatomy, Medicin, Nature, Problems of the State, and Accidents of the World), containing the Discoverys in Summ upon the Prosecutions and Inquirys Made; By Benjamin Allen, Batchellour of Physick or Medicin, formerly of Queen's Colledge, in Cambridge: Anno 1723. Medicine naturally occupies first place in Allen's notes, but some fifty pages are devoted to "An Idea on Rationall Anatomy," in which he discusses in great detail the various organs of the body. His "More Rare and Notable Medicinal Observations" contain some careful observations of cases, but are full of remedies of the curious and disgusting character with which all students of the therapy of that period are familiar. The prevalence of small-pox in those days is clearly pictured, and there is one interesting observation concerning a child born of a mother with small-pox, which itself had pock marks at birth, yet, notwithstanding this protection, subsequently caught small-pox. The general belief of those days in the significance of dreams and omens is reflected in Allen's writings. Other subjects noted by him are various "insects," among which the oyster is included, and some ancient British coins, while there are also certain philosophical disquisitions, such as "A Remedy against Distraction Leading to Suicide." Dr. Allen's tomb was rediscovered by Mr. Kenworthy in 1890, and Mr. Christy after a good deal of trouble succeeded recently in clearing up the whole of the inscription which he reproduces. Mr. Christy concludes with the suggestion that Dickens has introduced Dr. Benjamin Allen "as one of the characters in 'Pickwick,'" but it seems clear that at most it could have been only the name of Benjamin Allen, not his personality, that Dickens made use of.

THE RELATION OF QUININE TO TETANUS.

AMONG the attendant dangers of quinine when administered by hypodermic or intramuscular injection is to be classed the grave one of possible tetanus, and that without any contamination of the instrument or the solution, according to the investigations of Lieutenant-Colonel Sir David Semple, R.A.M.C. (retired), in a paper to be presently issued as a scientific memoir. According to an Indian correspondent Sir D. Semple explains this fact by the following findings: 1. Many people in health harbour tetanus spores in their bodies, either in healed wounds or in the intestinal tract. Thus hidden, the spores remain alive and retain their virulence, but for some reason or another do not grow into toxin-producing bacilli. It appears that tetanus-spore carriers may be quite common, for Sir David Semple found the spores in fæces of four out of 10 persons examined. The frequency of "healed-wound" carriers is not known, but probably is greater, for the majority of people have had slight injuries accompanied by the introduction of tetanus spores. In the thirteenth of Sir David Semple's experiments eight guinea-pigs were injected with tetanus spores entirely free from toxin ("washed tetanus spores"). The animals remained healthy. At periods varying from five to seven months after inoculation the guinea-pigs were killed, and small pieces of the subcutaneous tissue at the site of the inoculation were aseptically removed, placed in broth tubes, and incubated. In all the eight cases true tetanus bacilli were recovered and found to be virulent. Thus for at least seven months living tetanus bacilli may remain in the tissues without being destroyed by phagocytosis. 2. Tetanus-spore carriers are liable to suffer from tetanus (*a*) on recurrence of circumstances (such as exposure to great cold or heat or fatigue); (*b*) when the site where the spores have been introduced becomes converted into a medium which, being anaerobic, when phagocytosis fails is favourable for the growth of the introduced spores into toxin-producing bacilli; and (*c*) when a focus of dead tissue forms in a part of the body at a distance from the site where the spores are lodged. For the present inquiry this last condition is the most important. It is proved by experiments that the "latent" tetanus spores are sometimes conveyed from a site where they are harmless to one (such as at that of the quinine injection) where they can develop and produce toxin enough to cause tetanus. The third finding is that the results of injections are, (*a*) local destruction of tissue, and in most cases the formation of a slough which includes the true skin, subcutaneous tissue, and deep fasciæ; this means the formation of a subcutaneous necrotic area which is an anaerobic medium and very favourable to the development of tetanus spores. (*b*) The paralysis of the leucocytes so that their phagocytic action is hindered. These results may be of far-reaching importance. Thus it happens that if a malaria patient chance to be a tetanus-spore carrier, and quinine is injected, the leucocytes which crowd to the site of injection may carry spores from the area where they are harmlessly harboured to the necrotic patch, when they will find conditions suitable for development and produce toxin resulting in tetanus. The same may occur in the case of the "latent" spores in the site of the old wound.

THE WEATHER OF LAST MONTH.

AFTER the wintry winds, snow, and frost of the first week the weather of April underwent a favourable change, and although it never became very warm during the daytime its nights were mild for the time of year and frost was very seldom experienced, and had there been occasional showers instead of about 14 days of drought the general condition would have been very seasonable. In nearly all parts of the kingdom the rainfall was less than the normal in spite of some heavy downpours at the beginning of the month and frequent falls after the 25th. In some localities in the southern and south-eastern counties and in various parts of the midlands the aggregate fall was less than 75 per cent. of the average; at Nottingham it was only 53 per cent. The sunshine differed little from the average over the kingdom as a whole, being rather above in some districts and below it in others. The metropolitan area was among the more fortunate districts. Westminster recorded 144 hours or as much as an hour per day more than the average of the 25 preceding Aprils, and the City 130 hours, or 12 hours more than its average. At Kew the number of hours—149—was just equal to the normal, and at Greenwich 151 hours, or four in excess of the average, while at Hampstead the figure was as high as 161 hours. In London and its suburbs there were only two or three days with less than half an hour of sunshine, while there were many with more than seven hours. Hampstead, as might have been expected

from its altitude, was both the brightest and coolest district; its mean temperature was appreciably lower than in the metropolis generally. On the south-western and southern coasts of England the sunshine was mostly in excess of the average. At Torquay there were 191 hours, equal to a mean of more than 6¼ hours per day. April of last year was wet and cold, with little sunshine over the kingdom generally. On the shores of the Mediterranean there was a considerable increase of warmth after the first fortnight, although fluctuations of temperature were large and frequent. On the whole the Riviera was favoured with the most consistently fair weather, the sun being rarely obscured by cloud after the cold and unsettled spell early in the month, while the shaded thermometer rose to between 65° and 70° with a fair amount of regularity, and sometimes nearly reached 80°. The difference of warmth between the south of England and Nice was at least 10° during the daytime but less during the night. The greater part of Italy and the adjacent islands of Sicily and Malta were almost as sunny and experienced at least an equal degree of warmth. In the south-eastern corner of France, in which is situated Biarritz, the general condition was much less serene. After suffering severely from the wintry snap early in the month Biarritz remained cold for the time of year. The temperature was, however, more equable than on the Riviera and in Italy, the thermometer rising to between 55° and 59° on a large percentage of the days. Paris was brighter and generally warmer than London. There were very few dull days, and the total sunshine recorded was as high as 200 hours, equal to a mean of nearly seven hours per day. The average for London, Westminster, for August, which is generally its brightest month, is only 181 hours. Afternoons with the thermometer at 65° or higher were numerous, and on one occasion, on the 23rd, there was the summer heat of 75°. The coasts of Algeria and southern Spain were relatively cool for the season. As a rule the warmth was no greater than in Italy, thermometrical readings much above 70° being the exception.

THE COVENTRY SCHOOL CLINIC.

A SCHEME for a limited school clinic has been adopted by the corporation of Coventry, and has now received the sanction of the Board of Education for a period of 12 months. Its essential features are that (1) it is only proposed to deal with certain defects of school children which do not appear to be adequately dealt with by existing agencies; (2) it avoids the obnoxious system of training children early in their life to resort to charities; and (3) it is thought to be so arranged as not to run in opposition to the practice of the local medical profession. The three classes of defects proposed to be dealt with are: (1) eye defects; (2) ringworm; and (3) teeth defects. As regards eye defects, it is proposed to appoint an ophthalmic surgeon to deal with these; a properly equipped room will be provided; he will attend on specified days, not more than once a week, the number of days to be determined by the number of cases requiring attention. Children with eyesight defects are to be referred to their medical attendant; a counterfoil certificate will be provided for the medical attendant to sign if he desires the case to be referred to the clinic. This counterfoil certificate will be sent to the school medical officer who will make the appointment for the ophthalmologist. To meet the requirements of the Education (Medical Treatment) Act of 1909, a statement is intended to be submitted to the parent, somewhat on the lines of the scale adopted by the London County Council, with regard to the recovery of expenses, which will be in the hands of the secretary of the local education committee. The appointed ophthalmologist is to be paid at the rate of 5s. per case referred. It is estimated that a maximum of 200 cases will be referred per annum. For ringworm an X ray specialist is to be appointed at a remuneration of 3 guineas per half day; the appropriate room and apparatus are to be provided by the local education authority. As with eyesight defects, ringworm cases are to be referred to their medical attendants, and with a notification to the effect that chronic or appropriate cases may by them be referred for X ray treatment. Appointments for this treatment will be made by the school medical officer; the maximum expenditure sanctioned for this work is £228 8s. per year. For teeth defects a whole-time dentist at £300 per year is to be appointed. It is fully appreciated locally that this single appointment will be inadequate to deal with the 16,000 children attending the schools. It is regarded as experimental and educative. A room equipped with the necessary apparatus will be provided by the authority. The cases to be dealt with—mainly in the region of conservative dentistry—will be selected partly by the results of the systematic medical inspection of children and partly by the advice of the dentist appointed. The supervision of the clinic is in the hands of the school medical officer, who is in Coventry the medical officer of health.

WHAT IS THE PERMANENT BENEFIT FROM SANATORIUM TREATMENT?

AMONG the many questions connected with the problem of sanatorium treatment for pulmonary tuberculosis none is of greater moment than its ultimate benefit to the patient. At many sanatoriums the authorities have published the immediate results of their treatment, but their figures are of little value in estimating the permanent improvement. This question can be answered only by statistics dealing with patients who have been kept under observation for several years after their return to ordinary life. A year ago Dr. N. D. Bardswell, in his "Expectation of Life of the Consumptive after Sanatorium Treatment," showed that of 250 cases who had been treated in the years 1899–1905, 99 were "well" in the latter year, 101 dead, and the rest "alive." Many of these, however, had probably returned home only a short time before the enumeration was made, and we still need to know more of the results five or ten years after their discharge. Within the last week or two an interesting report dealing with this matter has been issued by the Medical Advisory Subcommittee of the Charity Organisation Society.[1] The tables of this report include 479 cases, all of the working classes, who have passed through their eight sanatoriums since 1902. Of these 139 have been discharged for at least five completed years. No special selection was exercised before granting them admission provided they possessed "a genuine chance of recovery." They were retained under treatment just as long as the doctor thought advisable—on an average four to five months. In the meantime their families were provided for, thus relieving them of mental worry, and on their discharge the society interested itself in finding them suitable work. In a word, the cases were placed from first to last under conditions as favourable as is practicable for a consumptive working-man. Of these 139 cases 19 have been lost sight of. Each of the remaining 120 has been visited early in the present year—that is, five to eight years after their discharge. Briefly summarised the results can be grouped under four headings: 39 (32 per cent.) are well and either working or fit to work; 8 (7 per cent.) are improved but capable only of light work; 7 (6 per cent.) are unimproved or have relapsed; while 66 (55 per cent.) are dead. At first sight, perhaps, this mortality seems to spread a gloomy

[1] The Sanatorium Treatment of Consumption. A Report of the Society's Work in the Years 1902-1910.

atmosphere over the results. With one-third of the cases, however, restored to a useful and active life instead of succumbing, as many of them must have done, to their fell disease, the results are distinctly encouraging. The total benefit, moreover, is not to be measured solely, or indeed mainly, by these figures. Each of these 120 patients was made an apostle of healthy living. He was taught the risks to which his household would be exposed by the presence of a consumptive in its midst, and these lessons he would pass on to his family. Probably, as the society claims, it is not an over-statement that for every patient sent to a sanatorium the lives of three or four other persons are saved from tuberculosis.

ANTIMALARIAL MEASURES IN JAMAICA.

THE Special Commission appointed by His Excellency Sir Sydney Ollivier, Governor of Jamaica, to investigate the conditions that give rise to malarial fever in that colony, and to take remedial measures for the same, has presented a report of work done up to the end of 1910. The commission laid down for itself a comprehensive programme, and is able to give an account of substantial progress under nearly every head. Speaking generally, we may say that the objects aimed at were the dissemination of knowledge as to means of prevention among the inhabitants of fever-stricken districts, the investigation of the actual incidence of malaria in places suspected to be feverish, the free administration of quinine, and the carrying out of works designed to do away with fever-breeding conditions. For the first of these objects, that of instruction, lantern lectures have been given at 18 places where malaria had been specially prevalent; it is considered that this medical missionary work has been of value in preparing the minds of uninformed persons (that is, we suppose, the bulk of the population) for the reception of the public health law which came into operation last September, and for understanding the reasons of its introduction. For the second object, a malarial survey of the chief towns and foci of malaria throughout the island has been obtained, and maps and reports have been furnished, describing the mosquito breeding-places and the measures necessary for dealing with them. An "endemic index" to malaria has been obtained by a spleen and blood census of school children: this was found to be 16·7 at Spanish Town, and 35 at Montego Bay (the second and third largest towns in the island); as high as 45·5 at smaller places, such as Annotto Bay and Black River; and at the West End of Kingston (probably the most thickly populated area in Jamaica), 65. Thirdly, quinine has been distributed to school children, to the police, and to the inhabitants of specially malarious districts. Lastly, the parochial boards—which are the guardians of the public health, which have the power of levying taxes for sanitary purposes, and on which, therefore, devolves the duty of carrying out the necessary measures—have been circularised and requested to take action in coöperation with the officers of the commission. The Legislative Council had voted £1000 in aid of the operations of the Malaria Commission; and, as was naturally to be expected, the response to the Colonial Secretary's circular to the parochial boards was in most cases a request for a considerable grant of money, one authority promptly asking that £500 might be placed at its disposal for the filling up of a swamp, or rather for the construction of a drain as a preliminary step towards that end. In reply, Professor Ronald Ross's maxims were commended to the earnest attention of the board, one of these being: "We start work at once with whatever means we can scrape together." Another authority, in acknowledging an allotment of £40 for sanitary work, trusts that the Government Public Works Department will cut down mangroves, drain or fill in swamps, and remove the insanitary spots on Government property in and adjacent to the town. As the total allotment of Government funds for such special antimalarial work was £1000 only for the whole of the island, it is manifest that large sums must be provided by local authorities and property-owners. In this particular case the Colonial Secretary replied that it appeared desirable to consider whether the inhabitants could be assisted or encouraged to remove to a more healthy locality. In the town of Savanna-la-Mar, having a population of 4000, a particular "swamp area" is reported as being a populous neighbourhood; part of this is escheatable to Government for non-payment of taxes. It was recommended that the Government should take over this land and give it out to people, in lots of a quarter of an acre, for a term of years, on condition that they pay taxes on it, put up decent houses, clear and fill it to a suitable level; after which the land may become their own property with or without payment. It would appear that some such scheme as this would provide a solution for the malaria problem in many localities, if carried out on an extensive scale. Large sums of money must necessarily be expended on antimalarial measures to combat the existing insanitary conditions; the funds must be provided either from the Government exchequer or from local sources, or from both. It is only reasonable that the local inhabitants should pay for the immense benefits they would receive by the increased healthiness of their several towns and villages, but the ready money required is not immediately available; it seems to us, therefore, that if possible Government aid should be afforded. This might be by means of local loans or, perhaps preferably, on terms such as suggested—namely, granting land to the people, stipulating that they put it into a sanitary condition. The sum of £1000 voted by the Legislative Council in aid of the operations of the Malaria Commission is evidently quite insufficient to remedy the existing state of things; and, indeed, was probably never expected to do more than start the antimalarial campaign, by investigation, instruction of local authorities as to their best course of action, and education of the people generally in antimalarial hygiene. If the Government can stimulate the local bodies and private persons to expenditure on the necessary measures by grants of land on condition that the same is put into proper sanitary condition, this would, we think, be a powerful incentive to the outlay of private capital, which would result in benefit to the public health as well as to the private interests of individuals and the prosperity of the community.

OXYPATHY.

THE formation of certain acids as a result of the metabolic processes in the body and their elimination from the body are familiar facts in physiology. It is also well known that acids of this kind which are incapable of oxidation are rendered innocuous to the organism by the fixed alkalies or by ammonia. The relation of these facts to disease in man has been studied in an interesting book recently published by Professor Wilhelm Stoeltzner of Halle.[1] He believes that disturbances of the normal mechanism may originate in three ways. The first is a result of the nature of the food material, which may lead to the formation of more acid than the body can supply alkali for; this he defines as alimentary acid poisoning. The second results from disturbance of the intermediate metabolic processes, the acid formation in diabetes being a case in point. The third form he suggests may be the result of an abnormally low

[1] Oxypathie. Von Professor Dr. Wilhelm Stoeltzner, Direktor der Universitäts-Poliklinik für Kinder Krankheiten in Halle-a-S. Berlin: S. Karger, 1911. Pp. 92. Price M.3.

tolerance of acid, this being defined as a constitutional form. For such a condition and its associated symptoms and complications he proposes the term oxypathy. He points out that in French medical literature the condition of arthritism has played an important part for many years in the affections of infancy, of childhood, and of adult life. Eczema, urticaria, acne, psoriasis, bronchial asthma, migraine, diabetes, gout, nephrolithiasis, chronic arthritic conditions, and many forms of dyspepsia have been ranked as manifestations of this diathesis. He further regards the lithæmia of older British writers as practically identical with arthritism. In contrast with the attention paid to these questions of diathesis in England and France he states that they have been largely neglected in Germany. In 1905 A. Czerny described as the exudative diathesis a condition occurring in children which conforms in part to the conceptions of lithæmia and arthritism, but is less comprehensive. Professor Stoeltzner believes that many of the conditions included under the above-mentioned diatheses are the result of alimentary or constitutional disturbances of the mechanism for eliminating acids formed in metabolism, and he therefore describes them as oxypathic in origin. He further suggests that in infancy this diathesis may lead to a condition which he defines as oxypathic atrophy, if the infants are fed upon cow's or goat's milk. Infectious diseases, he believes, are acquired more readily by oxypathic individuals and run a more unfavourable course than in other persons. Oxypathy also predisposes to obesity. Professor Stoeltzner develops his thesis by reference to some cases of atrophy in infants fed on cow's milk, a condition which he suggests may be due to an alimentary phosphoric acid intoxication. He also discusses the formation of fatty stools, the relation of rickets to oxypathy, and the occurrence of oxypathic eczema. Apart from the name there seems little that is new in Professor Stoeltzner's suggestions, and he admits that experiments upon the metabolism of alkalies in the body are necessary to establish the views he puts forward, but his observations are of interest in drawing attention to and developing in Germany views which have long been widely held in this country and in France.

DEATH OF SIR NATHAN BODINGTON.

THE University of Leeds has sustained a great loss by the death of its Vice-Chancellor. When on his Easter holiday Sir Nathan Bodington was seized with serious illness, and though there was some improvement on his return, he was attacked by angina pectoris, to which he succumbed on Friday, May 12th. A few notes on Sir Nathan Bodington's career will be interesting to our readers. A classical education, followed by the holding of some teaching posts in Manchester, Birmingham, and at his own well-loved University of Oxford were the events which preceded his appointment as professor of Greek and Principal of the Yorkshire College, which has now developed into the University of Leeds, and of which he was the first Vice-Chancellor. For 30 years the work of Sir Nathan Bodington's life has been that of guiding the development of the comparatively small Yorkshire College as he knew it first through its various changes until it became an institution of full university rank. He was, as may be remembered, along with many others opposed to the disruption of the Victoria University, believing so strongly as he did in the federal system of university, and he fought strenuously, though unsuccessfully, against it. He accepted the granting of separate charters to Manchester and Liverpool, however, as for ever condemning the system of the federal university in this country, and he thereupon devoted himself to the work necessary for the foundation of a university in the city of Leeds. In an excellent appreciation of Sir Nathan Bodington by one of his colleagues in the *Yorkshire Post* the writer says very truly: "His tenure of office was so long, his knowledge of every department so intimate, his influence so penetrating, that it is not merely the change of an official, but rather the passing of an epoch that the University recognises to-day." The same writer says: "There was something ironic, doubtless, in the spectacle of one who was the product of the classical scholarship of Oxford, and who had gained such high distinction there, presiding over a university where engineering, weaving, dyeing, and leather industries play so important and so honourable a part. But the University was the gainer; for he worked unceasingly to widen the curriculum of what was then the Yorkshire College, and give to classics and modern languages, to history and literature a place, not of privilege, but of equality, in the studies of the University; and no one now questions that the city and the University have profited by the development. Nor certainly were the technologies the losers by his interest in the humanities. He entered perfectly into their needs, and was never weary of recommending the scientific study of technology to the people and manufacturers of Leeds." In his work at the University it is not too much to say that the Vice-Chancellor endeared himself to all the members of the staff and very especially to the members of the Senate over whose deliberations he presided with a combination of firmness, tact, and courtesy. With the students he was deservedly popular, nor was his popularity based on any laxity of discipline, a risky cause of even a transient sentiment of this kind, but on a solid respect for his kindness of heart and devoted loyalty to the University of which they were a part. When some four years ago Dr. Bodington, as he then was, married, the University welcomed with the utmost cordiality the daughter of its former treasurer, the late Sir John Barran, and those who have been intimately associated with the work of the University, knowing how fully she has entered into all its interests, will feel deep sympathy in her sorrow.

RADIUM CATAPHORESIS.

CATAPHORESIS, or the introduction of drugs into the body by means of electricity through the unbroken skin, is a method of treatment which has come into vogue in recent years and has been used with considerable success. To Dr. Haret, assistant in radiology in the service of M. Béclère at the Saint-Antoine Hospital, Paris, has occurred the idea of applying this very modern method to radium. At a meeting of the Académie de Médecine of Paris on March 21st M. Béclère summarised a paper by Dr. Haret entitled "A New Method of Radiotherapy, the Introduction of the Radium Ion into Pathological Tissues without Breaking of the Skin." Previously radium has generally been used in the solid form and applied to the surface of diseased parts or introduced into natural cavities. M. Dominici has devised a method of using radium by introducing it in a metallic tube through an incision into the centre of a tumour. By Dr. Haret's method the drug is introduced without any incision and not merely into the centre of the tumour but throughout all its cells. Before applying the method to man Dr. Haret made a series of experiments on the rabbit and the calf, which were communicated to the Académie des Sciences on March 13th by Professor Chauveau. He found that at the positive electrode, which consisted of a compress soaked in a solution of radium bromide, radium penetrated by ionisation, without the intervention of the circulation, not only into the dermis but into the subjacent tissues, where it was found in the aponeuroses muscles, periosteum, and bone to a depth of 9 centimetres as long as a

fortnight after its introduction. Applications at intervals of a week allowed the radium to accumulate in the tissues. In the doses employed the radium caused no change in the normal cells of the various tissues. Dr. Haret then applied the method to man in the cases of nine patients of whom eight were suffering from subcutaneous neoplasms. Most of them were benefited in various degrees. The principal changes observed were rapid diminution and even disappearance of pain and diminution in the size of the tumours. The most striking result was obtained in the case of a girl suffering from a sarcoma of the scapula of the size of the fist. After considerable diminution in size due to the action of the X rays the tumour remained stationary and painful. Under radium cataphoresis the pains disappeared and the tumour regressed so much that after 15 applications in five months no trace remained and the patient was cured, temporarily at any rate. M. Béclère considers that this new method is full of promise. Two communications in our present issue (pp. 1337 and 1339) deal with the radium treatment of cancer. In certain cases it has proved most successful, but it has distinct limitations as well as difficulties and drawbacks. Both Mr. C. Mansell Moullin and Dr. N. S. Finzi point out the necessity of using much larger doses of radium than have been previously employed and of attacking the tumour from every point. Indeed, the former finds that if insufficient doses be used more harm than good is done, for if the irradiation of the whole mass be not thorough the cells which receive the smaller doses are not killed but are stimulated to increase growth in consequence of the increased blood-supply which is produced. Perhaps the method of cataphoresis will overcome the difficulty of thorough dosage in the case of large tumours. At present radiologists try to overcome this difficulty by burying a radium tube in the growth. But while this practice is recommended by Dr. Finzi it is deprecated by Mr. Mansell Moullin on the ground that all manipulations of malignant growths, especially of soft rapidly growing ones, tend to cause dissemination. The method of cataphoresis entirely obviates this difficulty. We look forward with interest to further reports on its results.

GUMMATOUS MESAORTITIS AND ITS OCCURRENCE IN PARASYPHILITIC DISEASE.

IT is only recently that attention has been drawn to the occurrence of microscopical changes in the middle coat of the aorta of unmistakeable syphilitic type. Their recognition, however, has an important practical bearing on the vexed question of the origin, syphilitic or otherwise, of such familiar mental diseases as general paralysis of the insane. There is still a minority of medical opinion to deny the syphilitic origin of this disease, and while the test introduced by Wassermann is clinically valuable it would be a matter of considerable significance to be able to point to certain anatomical changes in the aorta as conclusive evidence of preceding syphilitic infection. Even though the mesaortitis be not constantly found the value of the pathological change is not thereby lessened, for syphilitic invasion of the organism does not always follow an identical course. Dr. C. Ladame of the Bel-Air Asylum at Geneva has devoted a short but important paper to this subject in the *Nouvelle Iconographie de la Salpêtrière* for November-December, 1910. In six cases of general paralysis, two cases of aneurysm of the aorta, and one case of diffuse cerebral syphilis, Dr. Ladame has found identical mesaortitis; the specificity of the pathological changes is such that the author is inclined to maintain that all of the cases of general paralysis where they are present must have had syphilis. The lesions of gummatous mesaortitis are usually to be found on the posterior wall of the ascending aorta. Here small irregular patches, like cicatrices, slightly raised, frequently umbilicated, and often of a whitish pink colour, can be detected; they do not show regressive changes and are not calcified. The intima covers them without solution of its continuity. By these features the condition is readily distinguishable from atheroma, though no doubt the latter may occur in association with the former. Microscopically, there is a more or less intense inflammation of the connective-vascular tissue of the media and adventitia; this may go on to the formation of minute—in fact, microscopical—gummata; the vasa aortæ are the seat of obliterating endarteritis. As the process becomes more chronic organised granulomata result, forming minute cicatrices which retract the walls of the vessel. The cause of the irregularity of the surface of the patches or plaques is this shrinkage of tissue round the small degenerated vasa vasorum, whose walls often show hyaline changes. It is this cicatricial variety that Dr. Ladame has found in his cases of general paralysis, presumably because of the chronicity of the cases and of the lapse of time since the original syphilitic infection. Occasionally, however, he has seen microscopical gummata in more active formation. He believes that something like from 50 to 75 per cent. of cases of general paralysis have in his experience shown these changes, but his figures are too small for any further statements at present. The subject appears to be one which will repay investigation, especially if these minute lesions are proved to be pathognomonic of preceding syphilis.

THE polling for the election of a Direct Representative for England has resulted as follows:—

Dr. J. A. MACDONALD	4250
Mr. G. JACKSON...	4049
Dr. A. HAWKYARD	1310
Dr. CURRY	497

H.R.H. the Duke of Connaught will open the newly erected Cancer Research Institute at the Cancer Hospital on Tuesday next, May 23rd, at 3 P.M.

THE ROYAL SOCIETY CONVERSAZIONE.

AT the first conversazione of the Royal Society, which was held at Burlington House on May 10th, the exhibits were numerous and of widespread interest, practically all branches of science obtaining an equal representation. It may be surmised that as there was no similar meeting last year, owing to the death of King Edward, the recent demonstration included the fruits of research of the past two years.

One of the most beautiful exhibits was the series of osmotic growths shown by Mr. Deane Butcher. These growths are mineral productions simulating the forms of organic life, and they were first studied by Professor Leduc of Nantes, who has written a work on the subject under the title of "Théorie Physio-Chemique de la Vie et Générations Spontanées," which has recently been translated into English under the title of "The Mechanism of Life." The growths are obtained by sowing a mineral seed in a concentrated inorganic mother liquor, as, for example, copper sulphate and sugar in a solution of potassium ferrocyanide or manganese chloride sown in a sodium silicate solution. The nucleus reacts with the liquid to form an insoluble gelatinous precipitate at the surface of contact. This semi-permeable extensible membrane is distended by the osmotic pressure within and grows by a process of intussusception, branching and putting forth terminal organs as it reaches a solution of lesser concentration.

At the same table Sir W. B. Leishman showed microscopic specimens of the parasite found in cases of infantile splenic anæmia, an extremely fatal disease which appears widespread in the Mediterranean littoral. Experiments illustrating the resistance of the bacillus

pyocyaneus to drying in vacuo were brought forward by Mr. S. G. Shattock and Mr. L. S. Dudgeon. The bacillus kept in vacuo maintained by charcoal absorption of liquid air, light being excluded, dies within three months. This is an exceptional maintenance of vitality under these conditions, but it corresponds with that of certain seeds exposed in the same way. Mr. Henry Crookes showed some interesting photographs and living cultures of the bacillus phosphorescens illustrating the germicidal action of some metals. Nutrient gelatin agar is poured into Petri dishes containing small pieces of metal and when the medium has set the surface is infected. After 24 hours the bacteria grow luxuriantly except in a zone surrounding the piece of metal which remains sterile. The extent of this "death zone" varies with different metals. The metals with a slight germicidal action are bismuth, lead, nickel, iron, aluminium, zinc, and copper, while those having a strong germicidal action are thallium, cobalt, silver, mercury, antimony, and arsenic. Other bacteria are equally affected by this poisonous action of the metals and it is suggested that if our water cisterns were made of silver the water stored in them would be delivered to the consumer sterilised. Germicidal action was again demonstrated in the exhibit of Professor R. T. Hewlett and Mr. J. E. Barnard, the germ killer employed in this case being the ultra-violet rays. The experiments indicate that a quartz mercury vapour lamp in relation to its current consumption is the most economical source of light at present available for the purpose. The exhibit included an apparatus for disintegrating bacterial and other organic cells.

Mr. A. D. Hall, F.R.S., showed a highly interesting series of plants as an evidence of the biological factor in soils limiting the activity of bacteria in producing plant food. As we have pointed out before in these columns, the fertility of the soil is closely connected with the amount of bacterial activity, but a factor exists in ordinary soils which limits this activity. This factor is biological and appears to consist of large destructive organisms. When soils are kept in moist, warm conditions, and well supplied with organic matter, as in a greenhouse, there is a marked accumulation of the limiting factor, and a similar accumulation occurs in the soils of sewage farms, the so-called "sewage sick" soil. On the other hand, dry-soil conditions are unfavourable to the factor. Heating the soil to 55° C., prolonged drying at lower temperatures, or treatment with various antiseptics, such as toluene, kills the factor and leads to a marked increase of bacterial activity. As a consequence, in field and greenhouse soils there is an increased production of plant food, and in sewage farm soils an increased rate of decomposition.

There was an interesting exhibit of radium by Sir William Ramsay and Mr. Francis Fox, in the form of radium bromide extracted from Cornish pitchblende by the British Radium Corporation at their works at Limehouse. The brilliant blue phosphorescence of recently heated radium bromide was shown. Professor W. M. Thornton described a very interesting test for distinguishing between animal and vegetable in low forms of life. When an electric current is passed through a weak emulsion in water of typical animal and vegetable cells, such as blood corpuscles, yeast, bacteria, and unicellular algæ, the animal cells are driven to the positive pole, the vegetable cells to the negative, provided that the latter are from fresh active growths. The movement reverses with the direction of the current. Lastly we may mention here a simple appliance calculated to save life for attaching to miners' safety lamps, the invention of Sir Henry Cunynghame and Professor Cadman. It consists of a small piece of asbestos soaked in carbonate of soda, which can at will be introduced into the flame of the lamp without the necessity of lowering it. The presence of small percentages of fire-damp is immediately indicated by the appearance of an orange-coloured cap of the same character as appears when a wire charged with soda is introduced into a Bunsen gas flame.

The exhibits altogether attracted considerable interest, and during the evening there was a large and distinguished company of visitors and Fellows present who were received by the President, Sir Archibald Geikie.

BRISTOL NATURALISTS' SOCIETY.—The last meeting of the session was recently held at the University, when Mr. Stephen Paget gave an interesting lecture on "The Life of Pasteur."

INTERNATIONAL ASSOCIATION OF MEDICAL MUSEUMS.

A MEETING of pathologists resident in London and the provinces interested in medical museum work was held on May 13th for the purpose of receiving information upon the organisation known as the International Association of Medical Museums, and with a view to extend the membership and general usefulness of this body in Great Britain. The meeting was called by Dr. W. Osler, Regius Professor of Medicine at the University of Oxford, and was held at the Royal College of Surgeons of England by the courtesy and invitation of the President and Council of the College. Sir JONATHAN HUTCHINSON occupied the chair. Dr. Maude Abbott of Montreal, Canada, secretary and treasurer of the association, was present with a report upon the origin, aims, and activities of the association. There were present also Dr. Arthur Keith, curator, Royal College of Surgeons Museum; Dr. F. W. Andrewes, Dr. J. Hugh Thursfield, and Dr. A. S. Woodwark, of St. Bartholomew's Hospital; Dr. E. F. Bashford, Imperial Cancer Research; Dr. J. A. Braxton Hicks, Westminster Hospital; Dr. R. S. Trevor, St. George's Hospital; Dr. Hubert Turnbull, London Hospital; Dr. Bernard H. Spilsbury, St. Mary's Hospital; Dr. M. Paine and Dr. E. H. Kettle, Cancer Hospital Research Institute; Mr. Kenneth Goadby, National Dental Hospital; Professor I. Walker Hall of Bristol; Professor J. M. Beattie of the University of Sheffield; and others.

Professor OSLER explained that the object of the meeting was to receive information from the secretary upon the association, and also to arrange for a meeting to be held in London in conjunction with the International Congress of Medicine in 1913. Dr. Abbott was known to most of those present as one who had developed the Medical Museum of McGill University to a high degree of usefulness in medical teaching by working along the strictly Anglican lines of systematic classification and museum demonstration methods. In this country, where the labours of John and William Hunter had laid the foundation of so many great museums, such work was bound to meet with much sympathy. As secretary-treasurer of the association Dr. Abbott had been intimately connected with this body from its earliest organisation, and was therefore competent to give full information on the subject.

Sir JONATHAN HUTCHINSON introduced Dr. Abbott, reserving his remarks upon the association until after the presentation of her report.

Dr. ABBOTT then addressed the meeting. The International Association of Medical Museums had its origin in 1889 in a suggestion of the late Professor Wyatt Johnston of McGill University that an association of medical museum curators should be formed. This proposal was made by the McGill Museum to the Army Medical Museum, Washington, D.C., but action was not taken until 1906, when the matter was again brought forward at the suggestion of Dr. D. S. Lamb. With the coöperation of the late Major James Carroll, curator of the Army Medical Museum, it was decided to organise an association which should be international in scope, and which should have as its object the development of an active department for the interchange of museum specimens and material for research, the elevation of the medical museum as a teaching medium, and the improvement of methods of museum technique by the discussion of methods. A constitution was drawn up, an organising committee formed, consisting of Dr. Carroll as chairman, W. G. MacCallum of Baltimore, A. S. Warthin of Ann Arbor, F. F. Wesbrook of Minnesota, and the secretary, and an invitation to membership was extended to leading pathologists throughout the world. So active and warm was the response elicited that it was evident a real need for such an association existed. Since then four meetings had been held, an active exchange department had been inaugurated, and also an experience department for the interchange of information on points of museum interest, and a yearly bulletin containing full reports of proceedings had been published. The membership had rapidly increased, now numbering 98, and including representatives in Africa, Australia, and South America, as well as in the principal countries of Europe and North America. The latest step had been the organisation of local European centres under the

control of a corresponding member in France, Germany, Holland, and Belgium, through which exchanges were to be transacted locally, and the election of suitable members proposed. It was desirable that this step should also be taken in England, especially in view of the proposed meeting here in 1913.

Sir JONATHAN HUTCHINSON then spoke at length. He said that this organisation had his entire sympathy as providing a link between museum workers that was much needed, especially for purposes of exchange. He thought it important that local centres should be established where duplicate material could, if necessary, be stored, and an adequate journal should be published. For this purpose funds would be needed in order that the work might be carried out on a scale larger than the membership fees would allow. He strongly recommended that such an appeal should at once be made to a suitable quarter.

Dr. KEITH dwelt upon the importance of this association to workers in medical museums and expressed his sympathy with it and his willingness to assist it forward in every possible way. It was to be remembered, however, that a new association, however needed, must be made to bear lightly upon its members, there being already several societies to which medical men in England must belong. The provisions of the constitution that the annual membership fee should be small (8*s.*), that the meetings should take place but once annually, and be held if possible in conjunction with the meetings of some other international medical body, were therefore wisely ordained.

After some general discussion the following resolutions were passed:—

1. That after the arrangements for the meeting of the International Congress of Medicine at London in 1913 are completed, steps shall be taken to arrange for a meeting of the International Association of Medical Museums in conjunction with this congress.
2. That the three great English medical societies—namely, the Pathological Society of Great Britain and Ireland, the Anatomical Society, and the Royal Society of Medicine, be made cognizant of the action of the International Association of Medical Museums, and that coöperation with these societies be attempted with special reference to the publication in their journals of the Department of Exchanges, as well as announcements and short reports of meetings.
3. That one or more correspondents in London be appointed to act as local secretaries. (Dr. Thursfield and Dr. Woodwark of St. Bartholomew's Hospital, and Dr. Kettle of the Cancer Research Hospital were named.)

All those present who were not already members joined the association.

THE LONDON COUNTY COUNCIL AND MEDICAL AFFAIRS.

Medical Treatment and the Education Estimates.

SOME hours were devoted by the London County Council at the meeting on May 16th to the discussion of the education estimates involving a sum aggregating some five millions sterling—a quarter of a million more than in the year before. Teachers' salaries accounted for precisely half of the total. The following were amongst the items of interest in the estimates: Meals for necessitous children, £89,545; medical inspection and treatment, £39,960; cleansing verminous children, £2205; maintenance of open-air schools, £3270. Special schools: For blind children, £9915; deaf, £17,415; mentally defective, £56,950; physically defective, £42,480; epileptic, £2440. A Finance Committee memorandum explained that an increase of £26,400 under the head of provision of school meals was due to the higher cost of administration, and the larger number of children fed during the summer. An increase of £20,885 in respect of medical inspection and treatment was accounted for chiefly by the employment of additional school medical officers and by the treatment of children for eye, ear, and skin ailments. From January to December, 1910, a sum of £185 was recovered from parents in respect of the cost of medical treatment, but the work of assessment of charges was considerably in arrear. With regard to provision still to be made for medical treatment, it was estimated that some 92,000 children would require treatment for eye, ear, nose, and throat ailments, and some 6000 for skin ailments, of whom 3500 would be suffering from ringworm. On the assumption that one-third of the general cases and two-thirds of the ringworm cases would be treated apart from the Council's scheme, provision should be made for treatment of 62,000 eye, ear, nose, and throat cases and 1200 ringworm cases. The cost at the existing hospitals and treatment centres worked out at 4*s.* 6*d.* a case in respect of eye, ear, nose, and throat cases and 17*s.* 10*d.* for ringworm cases. The cost of 62,000 cases at 4*s.* 6*d.* amounted to £13,950, and of 1325 ringworm cases at 17*s.* 10*d.* to £1180, or a total of, roughly, £15,000. As to dental treatment, provision amounting to £1170 was made for existing schemes at Poplar and Deptford, and £5000 were also included provisionally for further experimental dental surgeries. This sum would also allow of general provision being made for a small portion of the year for all cases of London children requiring treatment.

Some discussion took place with regard to dental treatment, an amendment being moved to increase the provisional estimate by £5000. The reply on behalf of the Finance Committee was that until the Government gave larger grants the ratepayers would not be justified in embarking definitely on so costly a matter as the provision of a complete scheme of dental treatment. To this came the retort that a question of such importance, involving the health and stamina of future generations, should not be delayed pending the settlement of the intricacies of imperial and local finance. The amendment was lost by 54 votes to 50, and ultimately the whole of the estimates were approved.

Revision of Agreements for Medical Treatment.

The Board of Education having consented to the renewal of agreements with hospitals for medical treatment until a common date, namely Dec. 31st next, the Council renewed its arrangements with several hospitals. In the case of the Royal Free Hospital, Gray's Inn-road, the Education Committee advised that this institution was not conveniently situated for the Council's purposes, and the agreement for the treatment of 50 ringworm cases was only renewed until September next. The committee also considered that, having regard to the facilities available in Hampstead for medical treatment of children at dispensaries and sick benefit clubs, the arrangements with the Hampstead Public Medical Service respecting 400 children should not be continued beyond the term of the present agreement. Offers by the governing bodies of the Kensington and Fulham General Hospital, the Metropolitan Hospital, Kingsland-road, and the North London or University College Hospital, Gower-street, to enter into medical treatment agreements with the Council were refused on the ground that the hospitals were not conveniently placed for school medical requirements.

Board of Education and Dental Treatment.

The Board of Education has approved till Dec. 31st arrangements for providing dental treatment at St. George's Dispensary, Blackfriars-road, S.E., subject to a report on the working of the scheme being submitted sufficiently early to allow of full consideration before the agreement comes up for renewal. On the question of cost, the Board expressed some doubt whether for the same expenditure as was contemplated the Council could not have provided a scheme of dental treatment, worked entirely under its own control, which would have been more efficient and comprehensive. The Board recognised, however, that the dispensary scheme was experimental, and that the experience gained by its means would be valuable to the Council.

The London Milk supply.

The Public Health Committee reported that of 760 samples of milk taken at the principal London railway termini during the quarter ended March 31st, 106, or 13·9 per cent., had been found to be tuberculous. The total number of samples taken since the General Powers Act, 1907, came into operation was 6523; the examination of 5698 of these samples had been completed, with the result that 640, or 11·2 per cent., proved to be tuberculous. The committee had considered once more the steps the Council should take in order to secure a pure milk-supply for London. Several attempts had been made to obtain powers to deal with milk which, at the time of entry into London, was contaminated with dirt. These clauses had been struck out from time to time on the ground that the powers sought should not be the subject of piecemeal legislation, but should be dealt with in a Bill for the whole country. Such a Bill was introduced by Mr. Burns in 1909, but was not proceeded with, although the question called for

early settlement. The Council's present powers were inadequate, because of the difficulty of tracing contaminated milk to its source in the absence of coöperation of other authorities under laws applicable to the whole country.

The Council passed a resolution urging the President of the Local Government Board to introduce a Pure Milk Bill in the present session of Parliament.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN extraordinary Comitia was held on May 11th, Sir THOMAS BARLOW, Bart., K.C.V.O., the President, being in the chair.

The following Members, who were elected to the Fellowship at the last meeting, were admitted as Fellows:—Peverell Smythe Hichens, M.D. Oxon. (Northampton); Frederick Stephen Palmer, M.D. Durh.; Charles Gabriel Seligmann, M.D. Lond.; Herbert Williamson, M.B. Camb.; John Alexander Nixon, M.B. Camb. (Clifton, Bristol); Horatio George Adamson, M.D. Lond.; Eric Danvers Macnamara, M.D. Camb.; and Harold Theodore Thompson, M.D. Camb.

The following registered medical practitioners, not Members of the College, nominated by the Council as especially eligible, and proposed to the College for election to the Fellowship, were also admitted as Fellows:—Edward Granville Browne, M.B. Camb., and Sir David Bruce, C.B., M.B. Edin.

The following communications were received:—1. From the Registrar-General, inviting criticism upon a revised copy of his "Suggestions to Medical Practitioners respecting Certificates of Causes of Death." The communication was referred to a committee for consideration and for report to the College. The PRESIDENT nominated the Registrar (Dr. J. A. Ormerod) and Dr. H. D. Rolleston to form the committee. 2. From the Editor of the *Royal Army Medical Corps Journal*, asking permission to copy, for purposes of publication in the journal, the photograph of Dr. Richard Brocklesby. The request was granted.

A letter was read from Sir William Allchin resigning the office of representative of the College upon the Senate of the University of London. The resignation was received with regret, and the thanks of the College were conveyed to Sir William Allchin for his services.

The PRESIDENT then dissolved the Comitia.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

MEETING OF COUNCIL.

AN ordinary meeting of the Council was held on May 11th, Mr. BUTLIN, the President, being in the chair.

Dr. E. F. BASHFORD was introduced, and the President handed him a cheque for £100, the Walker prize for the period 1906–1910, together with a document declaratory of the award. The prize is awarded quinquennially for advancing the knowledge of the pathology and therapy of cancer.

It was resolved to issue diplomas of Membership to 84 successful candidates.

The accounts of the Cartwright prize and medal were presented, and it was stated that the amount to be awarded with the Cartwright medal for the period 1911–1915 will be £70.

The SECRETARY reported the delivery of museum demonstrations by Professor Arthur Keith and by Mr. F. G. Shattock.

Letters of resignation from the Court of Examiners were received from Mr. C. T. Dent and from Sir Frederic S. Eve, and the PRESIDENT stated that the vacancies on the Court of Examiners so occasioned would be filled at the ordinary meeting of the Council on June 8th. Fellows wishing to become candidates for the office should make application in writing to the secretary on or before May 29th.

MEDICINE AND THE LAW.

The Death of a Prisoner after Arrest.

AN inquest was held recently by Mr. Troutbeck at Westminster upon the body of Karl Wenge, a German, 43 years of age, described as a chemist, who died at Bow-street police station in circumstances which appear to call in question the methods adopted by the police. Wenge was arrested about 6 P.M. at the door of his house in East Finchley on his return from the Law Courts, where he was said to have been engaged all day. He was taken into custody upon an extradition warrant charging him with obtaining goods by false pretences within the jurisdiction of the German Government, and was told that he must proceed at once to Bow-street with the detectives. He complained to the officers that he was suffering from heart disease and was feeling very ill, and asking also to be allowed to send for a medical man before starting. Upon this he was allowed to rest for a short time indoors, where he drank some lemonade, but his request to have medical assistance before leaving was refused. The evidence of the wife stated this, and her brother who was also present said that the deceased had declared that he would hold the police responsible, that the brother-in-law would be a witness, and that he would not live through the night. This witness also stated that the time during which the prisoner rested in his house amounted to a quarter of an hour or more. At 6.15 he was taken from the house to Bow-street police station in a taxicab, his wife accompanying him, and he arrived there at 6·40. At Bow-street a medical man was summoned, but when this gentleman first saw Wenge he was moribund, and he died ten minutes later, at 7.20. There was some conflict of evidence as to the details of what happened at the police station, as to an apparently irrelevant question of whether Dr. Wilfrid Sing, the medical man referred to, was present before the deceased died, which the widow had denied, as to why the deceased had not been allowed or made to lie down on the floor instead of being, after delay, placed upon a couch, and as to what appearances of suffering he had presented to the police. Mr. G. A. Hamerton, divisional surgeon, gave evidence of the results of post-mortem examination, which disclosed no traces of poison, but a diseased condition of the heart which if it had been known would have showed that the man was not fit to be taken to Bow-street, as had been done. Mr. Hamerton was not able to say whether medical examination before the removal of the deceased would have revealed the dangerous condition of his heart or whether without removal he would have lived. The jury eventually returned a verdict of death from heart-failure while the deceased was suffering from heart disease, accelerated by the excitement attending his arrest. There was no rider to this verdict because the jury were not unanimous in adding one, but it was intimated that 11 of their number were of the opinion that there had been neglect in the treatment of the deceased at the police station. The question as to whether there has been reasonably humane treatment of a prisoner arrested when complaining of illness is not only of interest to the medical profession, but is one in which public sympathy is naturally awakened when a man dies as described above. Probably the inspector in charge at Bow-street on the evening in question was right in saying that every merciful consideration was shown to Wenge there, but this is subject to the reservation that the policeman's knowledge of the special need for consideration in a particular case must necessarily be limited. A more important point seems to have been raised by the coroner when he asked the detective sergeant who made the arrest why no medical man was sent for at the house of the deceased when he asked to see one, and received the reply that there would have been as much delay in waiting for one as in getting to Bow-street. The time taken in reaching Bow-street was 25 minutes, and it was not till half an hour after his arrival that Wenge was seen by Mr. Sing. He therefore was kept without medical assistance for a full hour. The time during which he rested in his house was given by two witnesses respectively as five and as 15 minutes, so that there was at any rate some delay with a taxicab at the door, during which a medical man might have been fetched in a district in which presumably plenty of medical men are to be found. We are not informed when the warrant had been issued or how much time had elapsed before the police had

executed it, but the lengthy nature of extradition proceedings is well known, and the urgency of bringing to Bow-street without half-an-hour's delay a man charged with obtaining goods by false pretences in Germany is not very apparent. Such cases as that described are fortunately rare, and the proportion of prisoners who ask to see a medical practitioner before being taken to a police-station in a cab can hardly be considerable. When they do happen it must sometimes occur that a private practitioner has already acquired knowledge of the condition of the accused person by attending him, and to consult him before the patient's life is endangered would be wise.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 77 of the largest English towns 8338 births and 4394 deaths were registered during the week ending May 13th. The annual rate of mortality in these towns, calculated on their probably over-estimated population, which had steadily declined in the four preceding weeks from 15·9 to 13·3 per 1000, was equal to 13·4 in the week under notice. During the first six weeks of the current quarter the annual rate in these towns averaged 14·6 per 1000. In London during the same period the reported annual rate did not exceed 13·9 per 1000. The annual reported death-rates last week in the 77 large towns ranged from 5·7 in Leyton, 6·1 in Reading, 6·4 in East Ham, and 6·9 in Grimsby, to 19·4 in Rochdale, 20·1 in Tynemouth, 20·3 in Dewsbury, and 20·7 in Merthyr Tydfil. The 4394 deaths from all causes in the 77 towns last week exceeded by 9 the number in the previous week, and included 422 which were referred to the principal epidemic diseases, against numbers declining steadily from 702 to 412 in the nine preceding weeks. Of these 422 deaths, 173 resulted from measles, 116 from whooping-cough, 55 from infantile diarrhœa, 45 from diphtheria, 21 from scarlet fever, and 12 from enteric fever, but not one from small-pox. The mean annual death-rate from these epidemic diseases in the 77 towns was equal to 1·3 per 1000, and corresponded with the rate in the previous week. The fatal cases of measles in the 77 towns, which had steadily declined from 474 to 180 in the nine preceding weeks, further fell last week to 173; the highest annual death-rates from this disease recorded last week in these towns were 1·5 in Rotherham, 1·7 in South Shields, and 2·2 in Rhondda. The deaths from whooping-cough, which had been 134, 116, and 100 in the three preceding weeks, rose again last week to 116; they caused death-rates equal to 1·3 in Bristol, 1·4 in Warrington, and 1·5 in Blackburn. The 55 deaths of children under two years of age attributed to diarrhœa were fewer by 5 than the number in the previous week. The deaths referred to diphtheria, which had been 31 and 33 in the two previous weeks, further rose to 45 last week; they included 10 in London and its suburban districts, 7 in Manchester and Salford, 4 in Leeds, and 3 in Stoke-on-Trent. The 21 fatal cases of scarlet fever were fewer by one than those in the previous week; 4 occurred in London, 4 in Liverpool, and 2 in Preston. The deaths referred to enteric fever, which had been 9 and 17 in the two previous weeks, declined again to 12 last week; 3 occurred in London and its suburban districts. The number of scarlet fever patients under treatment in the metropolitan asylums and the London Fever Hospital, which had increased from 982 to 1045 on the four preceding Saturdays, had further risen to 1070 at the end of last week; 167 new cases of this disease were admitted to these hospitals during last week, against 141 and 142 in the two preceding weeks. These hospitals also contained 743 cases of measles, 798 of diphtheria, 310 of whooping-cough, 25 of enteric fever, and 13 of small-pox on Saturday last. Seven fresh cases of small-pox were admitted to the Joyce Green Hospital during the week. The 1148 deaths from all causes in London last week (a lower number than in any previous week of this year) included 232 which were referred to diseases of the respiratory system, against 268 and 227 in the two previous weeks; 7 deaths were directly referred to influenza, against 16 in the previous week. The deaths attributed to different forms of violence in the 77 towns, which had been 167 and 136 in the two preceding weeks, were 170 last week. The causes of 27, or 0·6 per cent., of the deaths registered in the 77 towns during the week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in London and in its eight suburban districts, in Manchester, Leeds, Sheffield, Bristol, Newcastle-on-Tyne, Hull, Salford, and in 45 other smaller towns; the 27 uncertified causes of death in the 77 towns last week included 7 in Birmingham, 4 in Liverpool, and 2 each in Sunderland, South Shields, and Gateshead.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns, having an estimated population of 1,710,299 persons (based on the recent Census enumeration) 929 births and 558 deaths were registered during the week ending May 13th. The annual rate of mortality in these towns, which had been equal to 19·1 and 17·3 per 1000 in the two preceding weeks, further declined to 17·0 in the week under notice. During the first six weeks of the current quarter the annual rate in these towns averaged 18·4 per 1000 of the recently enumerated population. The annual death-rate last week ranged in the eight towns from 13·1 and 14·2 per 1000 in Perth and Leith to 18·3 in Glasgow and 24·3 in Greenock. The 558 deaths from all causes in the eight towns last week showed a further decline of 9 from the numbers in recent weeks, but included 82 which were referred to the principal epidemic diseases, against 81 65, and 67 in the three preceding weeks; of these 82 deaths, 43 resulted from whooping-cough, 15 from measles, 9 from diarrhœa, 7 from scarlet fever, 6 from diphtheria, and 2 from enteric fever, but not one from small-pox. The mean annual rate from these epidemic diseases in the eight towns last week was equal to 2·5 per 1000, and exceeded by 1·2 the mean rate from the same diseases in the 77 English towns. The fatal cases of whooping-cough in the eight towns, which had been 56, 40, and 37 in the three preceding weeks, rose again last week to 43, and included 27 in Glasgow, 4 in Edinburgh, and 3 both in Dundee and Aberdeen. The 15 fatal cases of measles exceeded the number in any recent week; 12 occurred in Glasgow and 3 in Edinburgh. The 9 deaths attributed to diarrhœa were fewer by 2 than those in the previous week, including 5 in Glasgow and 2 in Dundee. The 7 fatal cases of scarlet fever showed a marked increase, 6 being recorded in Glasgow. Of the 6 deaths from diphtheria, corresponding with the number in the previous week, 2 occurred both in Glasgow and in Dundee. A death was referred to enteric fever in Paisley and in Perth. The deaths resulting from diseases of the respiratory system in the eight towns, which had been 136, 120, and 84 in the three preceding weeks, further declined last week to 75, and were 24 below the number in the corresponding week of last year. Of the 558 deaths from all causes in the eight towns, 184, or 33 per cent., were recorded in public institutions, and 33 were attributed to different forms of violence. The causes of 14 deaths in the eight towns last week, or 2·5 per cent., were not certified or not stated; in the 77 English towns last week the proportion of uncertified causes of death did not exceed 0·6 per cent.

HEALTH OF IRISH TOWNS.

In 22 town districts of Ireland, having an estimated population of 1,163,596 persons, 684 births and 397 deaths were registered during the week ending May 13th. The annual rate of mortality in these towns, which had been equal to 22·0, 20·8, and 18·2 per 1000 in the three preceding weeks, further declined to 17·8 in the week under notice During the first six weeks of the current quarter the annual death-rate in these towns averaged 20·3 per 1000; the mean rate during the same period in the 77 English towns did not exceed 14·6, and in the eight Scotch towns 18 4 per 1000. The annual death-rate during the week under notice in the 22 Irish towns was equal to 20·8 in Dublin (against 12·2 in London), 15·7 in Belfast, 20·5 in Cork, 10·7 in Londonderry, 10·9 in Limerick, and 11·7 in Waterford; in the 16 smallest of these Irish towns the mean annual death-rate during last week was equal to 18·7 per 1000. The 397 deaths from all causes in the 22 towns during the week showed a further decline of 10 from the high numbers in recent weeks, and included 35 which were referred to the principal epidemic diseases, against 28

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING APRIL, 1911.

(Specially compiled for THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1911.	NOTIFIED CASES OF INFECTIOUS DISEASE.											DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.‡								Deaths from all causes.	Death-rate per 1000 living.†
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Enteric fever.	Diarrhœa and enteritis (under 2 years)	Total.	Annual rate per 1000 persons living.		
LONDON...	4,912,054	2	587	442	1	37	1	32	303	9	1414	3·8	1	381	12	46	161	4	60	665	1·8	5533	15·5
West Districts.																							
Paddington	154,072	—	16	8	—	1	—	2	4	—	31	2·6	—	13	2	—	11	—	4	30	2·5	186	16·8
Kensington	185,607	—	11	10	—	—	—	2	13	—	36	2·5	—	5	—	—	7	—	—	12	0·8	200	15·1
Hammersmith	129,140	—	22	15	1	—	—	—	9	—	47	4·7	—	5	1	2	3	—	6	17	1·7	158	16·6
Fulham	186,190	—	31	23	—	1	—	3	8	—	66	4·6	—	16	—	2	2	—	4	24	1·7	166	12·1
Chelsea	75,673	—	10	5	—	—	—	2	5	—	22	3·8	—	4	1	—	—	—	2	7	1·2	89	15·9
City of Westminster	165,593	—	21	4	—	—	—	1	7	—	33	2·6	—	4	—	1	2	—	—	7	0·6	168	14·8
North Districts.																							
St. Marylebone	124,373	—	5	13	—	1	—	—	5	—	24	2·5	—	15	—	—	5	—	2	22	2·3	152	16·9
Hampstead	97,288	—	6	6	—	—	—	—	1	—	13	1·7	—	—	—	—	1	—	1	2	0·3	80	12·1
St. Pancras	238,187	—	24	20	—	—	—	1	17	—	62	3·4	—	11	—	3	12	—	1	27	1·5	263	15·1
Islington	355,550	—	22	32	—	3	—	3	18	2	80	2·9	—	23	—	2	13	1	5	44	1·6	407	15·5
Stoke Newington	55,260	—	5	4	—	1	—	—	—	—	10	2·4	—	5	—	—	2	—	—	7	1·7	62	15·2
Hackney	242,388	—	28	23	—	8	—	1	16	—	76	4·1	—	34	1	1	5	—	—	41	2·2	270	15·1
Central Districts.																							
Holborn	52,484	—	5	4	—	—	—	1	3	—	13	3·2	—	1	1	—	—	—	1	3	0·7	69	18·4
Finsbury	93,874	—	3	5	—	2	—	—	20	—	30	4·2	—	8	—	2	1	—	2	13	1·8	138	19·9
City of London	16,069	—	2	3	—	—	—	—	1	—	6	4·9	—	—	1	—	—	—	1	2	1·6	23	20·6
East Districts.																							
Shoreditch	113,961	—	2	12	—	1	—	1	9	—	25	2·9	—	8	1	3	5	—	4	21	2·4	173	20·8
Bethnal Green	131,855	—	6	16	—	1	—	2	11	1	37	3·7	—	20	—	2	11	—	2	35	3·5	189	18·9
Stepney	316,269	—	16	41	—	3	—	3	26	—	89	3·7	—	51	—	4	5	—	5	65	2·7	387	16·7
Poplar	172,917	2	39	21	—	1	—	—	10	2	75	5·7	1	31	2	2	7	—	—	43	3·2	235	18·3
South Districts.																							
Southwark	212,560	—	20	10	—	3	—	1	24	—	58	3·6	—	15	—	1	11	1	2	30	1·8	277	17·8
Bermondsey	126,919	—	35	16	—	—	—	3	8	—	62	6·4	—	9	—	2	9	—	2	22	2·3	181	19·1
Lambeth	330,000	—	56	22	—	5	—	1	19	1	104	4·1	—	19	—	4	12	1	3	39	1·5	364	14·9
Battersea...	190,434	—	19	13	—	2	—	3	11	1	49	3·4	—	4	—	2	5	—	—	11	0·8	171	12·6
Wandsworth	314,087	—	50	21	—	2	1	—	11	1	86	3·6	—	50	—	2	11	1	7	71	2·9	325	14·2
Camberwell	289,130	—	35	17	—	—	—	1	8	—	61	2·8	—	13	—	3	9	—	3	28	1·3	317	14·8
Deptford	120,715	—	18	11	—	—	—	—	16	—	45	4·9	—	7	—	1	6	—	1	15	1·6	120	13·7
Greenwich	114,872	—	24	17	—	—	—	—	12	1	54	6·1	—	5	1	3	3	—	—	12	1·4	113	13·1
Lewisham	169,078	—	17	35	—	2	—	—	6	—	60	4·6	—	3	—	2	2	—	1	8	0·6	130	10·4
Woolwich...	137,489	—	39	14	—	—	—	1	5	—	59	5·6	—	2	1	2	1	—	1	7	0·7	120	12·2
Port of London	—	—	—	1	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup. † The death-rates are corrected for variations in sex- and age-constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard. ‡ Deaths from "typhus fever" and "other continued fevers" are not now distinguished in the Registrar-General's weekly returns; these two columns are therefore omitted from the Table.

in each of the two preceding weeks; these 35 deaths were equal to an annual rate of 1·6 per 1000, which exceeded by 0·3 the mean rate from the same diseases in the 77 English towns. Of these 35 deaths from the principal epidemic diseases in the Irish towns, 17 resulted from measles, 6 from whooping-cough, 5 from diphtheria, 5 from diarrhœa, and 1 each from enteric fever and scarlet fever, but not one from small-pox. All the 17 fatal cases of measles (an increase of 9 upon the number in the previous week) occurred in Dublin. The 6 deaths from whooping-cough corresponded with the number in the previous week; they included 2 each in Dublin, Cork, and Sligo. Of the 5 deaths referred to diphtheria, 3 were recorded in Dublin and 2 in Dundalk. The 5 deaths attributed to diarrhœa were fewer by 3 than those in the previous week. The fatal case of enteric fever occurred in Dublin, and that of scarlet fever in Belfast. The deaths in the 22 towns referred to diseases of the respiratory system, which had been 87 and 105 in the two preceding weeks, declined again to 86 last week. Of the 397 deaths from all causes, 155, or 39 per cent., were recorded in public institutions. The causes of 11, or 2·8 per cent., of the deaths in the 22 towns were not certified either by a registered medical practitioner or by a coroner after inquest; the proportion of uncertified causes of death in the week under notice did not exceed 0·6 per cent. in the 77 largest English towns, and was equal to 2·5 per cent. in the eight principal Scotch towns.

VITAL STATISTICS OF LONDON DURING APRIL, 1911.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 3·8 per 1000 of the population, provisionally estimated at 4,912,054 persons in the middle of the year. In the two preceding months the rates were 4·1 and 3·9 per 1000 respectively. The lowest rates last month were recorded in Paddington, Kensington, the City of Westminster, St. Marylebone, Hampstead, and Stoke Newington; and the highest rates in the City of London, Poplar, Bermondsey, Deptford, Greenwich, and Woolwich. Only 2 cases of small-pox were notified last month, against 28 and 30 in the two preceding months; the 2 cases belonged to Poplar. The prevalence of scarlet fever showed a slight increase compared with that in the preceding month; this disease was proportionally most prevalent in Hammersmith, Fulham, Poplar, Bermondsey, Lambeth, Greenwich, and Woolwich. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals, which had been 1280, 1224, and 1012 at the end of the three preceding months, was 1018 at the end of last month; the weekly admissions averaged 127, against 142 and 124 in the two preceding months. Diphtheria was considerably less prevalent than in the preceding month; among the several metropolitan boroughs the greatest proportional prevalence of this disease was recorded in Hammersmith, Fulham, Bethnal Green, Stepney, Poplar, Bermondsey, Greenwich, and Lewisham. The Metropolitan Asylums Hospitals contained 827 diphtheria patients at the end of last month, against 902 and 881 at the end of the two preceding months; the weekly admissions averaged 97, against 120 and 107 in the two preceding months. The prevalence of enteric fever showed but little variation from that recorded in the previous month; this disease was proportionally most prevalent last month in Hackney, Finsbury, Southwark, and Lambeth. There were 22 enteric fever patients under treatment in the Metropolitan Asylums Hospitals at the end of the month, against 68, 41, and 32 at the end of the three preceding months; the weekly admissions averaged 5, against 7 and 3 in the two preceding months. Erysipelas was proportionally most prevalent in Finsbury, Shoreditch, Bethnal Green, Stepney, Southwark, Deptford, and Greenwich. The 32 cases of puerperal fever notified during the month included 3 in Fulham, in Islington, in Stepney, in Bermondsey, and in Battersea. The 9 cases notified as cerebro-spinal meningitis included 2 in Islington and 2 in Poplar.

The mortality statistics in the table relate to the deaths of persons actually belonging to the several boroughs, the deaths occurring in institutions having been distributed among the boroughs in which the deceased persons had previously resided; the death-rates from all causes are further corrected for variations in the sex and age constitution of the population of the several boroughs. During the four weeks ending April 29th the deaths of 5533 London residents were registered, equal to a corrected annual rate of 15·5 per 1000, against 16·5, 17·6, and 16·0 per 1000 in the three preceding months. The death-rates last month ranged from 10·4 in Lewisham, 12·1 in Fulham and in Hampstead, 12·2 in Woolwich, 12·6 in Battersea, 13·1 in Greenwich, and 13·7 in Deptford, to 18·3 in Poplar, 18·4 in Holborn, 18·9 in Bethnal Green, 19·1 in Bermondsey, 19·9 in Finsbury, 20·6 in the City of London, and 20·8 in Shoreditch. The 5533 deaths from all causes included 1 from small-pox, 381 from measles, 12 from scarlet fever, 46 from diphtheria, 161 from whooping-cough, 4 from enteric fever, and 60 (among children under two years of age) from diarrhœa and enteritis. The lowest death-rates from these diseases in the aggregate were recorded in Kensington, the City of Westminster, Hampstead, Holborn, Battersea, Lewisham, and Woolwich; and the highest rates in Paddington, Shoreditch, Bethnal Green, Stepney, Poplar, and Wandsworth. The 381 deaths from measles were 142 in excess of the corrected average number for the corresponding period of the five preceding years; among the metropolitan boroughs this disease was proportionally most fatal in St. Marylebone, Hackney, Bethnal Green, Stepney, Poplar, and Wandsworth. The 12 deaths from scarlet fever showed a decline of 25 from the corrected average number, and included 2 in Paddington and 2 in Poplar. The 46 fatal cases of diphtheria were slightly fewer than the corrected average number; the greatest proportional mortality from this disease was recorded last month in Hammersmith, Finsbury, Shoreditch, Bethnal Green, Bermondsey, Greenwich, and Woolwich. The 161 deaths from whooping-cough were 17 below the corrected average number; this disease was proportionally most fatal in Paddington, St. Pancras, Bethnal Green, Southwark, Bermondsey, and Deptford. The 4 fatal cases of enteric fever showed a decline of 9 from the corrected average number, and belonged respectively to Islington, Southwark, Lambeth, and Wandsworth. The 60 deaths from diarrhœa and enteritis among children under two years of age included 7 in Wandsworth, 6 in Hammersmith, 5 in Islington and in Stepney, and 4 in Paddington, in Fulham, and in Shoreditch. In conclusion, it may be stated that the aggregate mortality in London last month from the principal infectious diseases (excluding diarrhœa) was 17·5 per cent. above the average.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE undermentioned Staff-Surgeons have been promoted to the rank of Fleet-Surgeon in His Majesty's Fleet: Robert John MacKeown, Paul Hohling Mills Star, Edwin Swainson Miller, Herbert Henry Pearse, Oswald Rees, Cecil Howard Rock, Sidney Thomas Reid, Charles James Edward Cock, John Elphinstone Hood Phillips, and Albert Xavier Lavertine (dated May 15th, 1911).

The undermentioned Surgeons have been promoted to the rank of Staff-Surgeon in His Majesty's Fleet: Alfred William Iredell, Frederick Cecil Robinson, Maurice Taylor Male, Charles Henry Dawe, Reginald Thompson, William Kenneth Dudoit Breton, Edgar Sheldon Wilkinson, Robert Kennedy, Edward Aubrey Guy Wilkinson, John Steward Labouverie Page, William Edwin Ormsby, John Joseph Hogan Rooney, and Aloysius Francis Fleming (dated May 16th, 1911).

The following appointments are notified:—Fleet-Surgeons: W. B. Macleod to the *Invincible* on recommissioning; and E. B. Townsend to the *Superb* on recommissioning. Staff-Surgeons: M. J. Smith to the *Mars;* and C. H. J. Robinson to the *Roxburgh* on recommissioning. Surgeons: W. T. Haydon to the *Invincible* on recommissioning; A. C. Rusack to the *Superb* on recommissioning; R. Willan to the *Victory*, for R.N. Barracks; R. Kennedy to the *Victory*, additional, for disposal; J. E. Johnston to the *Gossamer;* and B. Taylor to the *Dreadnought*.

ARMY MEDICAL SERVICE.

Colonel Henry W. Murray is placed on retired pay (dated May 12th, 1911).

Lieutenant-Colonel Francis J. Jencken, from the Royal Army Medical Corps, to be Colonel, vice H. W. Murray (dated May 12th, 1911).

ROYAL ARMY MEDICAL CORPS.

The undermentioned Captains to be Majors (dated April 27th, 1911): Robert A. Cunningham, George G. Delap, D.S.O., Harold Simson, William R. Blackwell, Henry M. Nicholls, Arthur Chopping, Sydney G. Butler, John J. W. Prescott, D.S.O., Percy H. Falkner, Henry E. M. Douglas, V.C., D.S.O., Ernest E. Ellery, James W. Langstaff, Leonard Wood, Harold B. Fawcus, and Evelyn P. Sewell.

Colonel F. J. Jencken, in medical charge of the Royal Victoria Hospital at Netley, has taken up duty as Administrative Medical Officer of the Colchester District, in succession to Colonel A. P. O'Connor, C.B. Lieutenant-Colonel J. Meek, from Quetta, has taken over charge of the Military Hospital at Cosham. Lieutenant-Colonel H. D. Rowan, from Aldershot, has been appointed to the charge of the Military Hospital at Tidworth Park, Salisbury Plain. Major W. P. Gwynn, embarkation medical officer at Karachi, has been granted seven months' leave of absence. Major J. C. Jameson, on completion of a tour of service in Egypt, has been appointed for duty in the Eastern Command. Major C. T. Samman has been transferred from the Station Hospital at Dinapur to Mhow Cantonment. Captain C. Scaife, in charge of the Brigade Research Laboratory at Colaba, Bombay, has been granted leave of absence for six months. Captain E. L. Moss, on completion of a tour of service in India, has been posted for duty to the Dublin District. Captain D. L. Harding has been attached to the Senior Division of the Belfast University Contingent, Officers Training Corps. Captain H. L. Howell, who is serving in India, has been appointed Specialist in the Prevention of Disease and in Charge of the Brigade Research Laboratory at Ahmednagar. Captain D. O. Hyde, from the Dublin District, has taken up duty at York as Staff Officer to the Administrative Medical Officer of the West Riding Division. Captain H. W. Russell has been transferred from the London District to the Aldershot Command. Captain H. V. Bagshawe, from Sheffield, has joined for duty at Halifax.

INDIAN MEDICAL SERVICE.

Surgeon-General P. H. Benson, surgeon-general with the Government of the Madras Presidency, has been granted one month and 25 days' privilege leave of absence, with effect from May 30th, preparatory to retirement from the service. Colonel R. W. S. Lyons, civil surgeon of Dharwar, has been posted for duty in the Bombay Presidency. The services of Lieutenant-Colonel C. H. Bedford have been placed at the disposal of the Government of Burma preparatory to proceeding on leave of absence from India for six months. Major R. H. Maddox, Bengal, has been appointed Civil Surgeon at Gya. Major F. H. Watling has been selected for duty in the Jail Department in Bengal. Major V. H. Roberts, district plague medical officer of Ludhiana District, has been transferred to Rohtak. Major P. Atal has been selected for duty under orders of the Commander-in-Chief of India. Major E. D. W. Greig, Assistant Director of the Central Research Institute of India at Kasauli, has been granted eight months' leave of absence home. Major J. A. Black, Bengal, has been confirmed in his appointment as Chemical Examiner of the Punjab and Professor of Chemistry at the Lahore Medical College. Captain F. H. Salisbury has taken up duty as Officiating Superintendent of the Central Jail at Midnapur. Captain J. W. D. Megaw has been appointed to officiate as Professor of Pathology at the Medical College, Calcutta, during the absence on six months' leave of Major Leonard Rogers. The services of Captain A. W. M. Harvey have been placed at the disposal of the Government of India for civil employment in the Jail Department of Bengal Presidency. Captain L. M. Holmes has arrived home on leave of absence from India.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

John James McIntosh Shaw to be Lieutenant (on probation) (dated April 29th, 1911).

TERRITORIAL FORCE.

Royal Army Medical Corps.

Attached to Units other than Medical Units.—Lieutenant York T. G. Moore to be Captain (dated April 1st, 1911). Lieutenant Robert J. W. Oswald to be Captain (dated April 1st, 1911).

For Attachment to Units other than Medical Units.—Angus Macnab to be Lieutenant (dated March 1st, 1911). James Wilson McIntosh to be Lieutenant (dated Feb. 7th, 1911). William Frederick McAllister-Hewlings (formerly Surgeon-Lieutenant, 1st Volunteer Battalion, The Leicestershire Regiment) to be Captain (dated March 16th, 1911). Joseph Mary Aloysius Costello to be Lieutenant (dated March 18th, 1911). Lieutenant Alfred Coleridge, from the 3rd South Midland Field Ambulance, Royal Army Medical Corps, to be Lieutenant (dated March 31st, 1911).

DEATHS IN THE SERVICES.

Surgeon Thomas Ligertwood, C.B., R.A.M.C. (retired), late physician and surgeon to the Royal Hospital, Chelsea, at his residence in London on May 10th. He joined the service in 1851 as assistant surgeon, became surgeon in 1856 and retired in 1869. He served in the Crimean campaign during 1854–56 and was present at the battle of Alma, at Inkerman, where he was slightly wounded, and at the capture of Balaklava (mentioned in despatches, medal with three clasps, and was made a Knight of the Legion of Honour).

MILITARY ARRANGEMENTS FOR THE CORONATION PROCESSIONS.

It is announced that some 45,000 troops will be on duty on June 22nd and 55,000 on June 23rd. On each day all branches of the service will be represented, and arrangements have been made for the attendance of representatives of Queen Alexandra's Royal Naval Nursing Service, Queen Alexandra's Imperial Military Nursing Service, and the Territorial Force Nursing Service.

Colonel Richard Jennings, A.M.S., the administrative medical officer for the Devonport District, has been appointed Honorary Surgeon to the King, vice Surgeon-General J. A. Marston, C.B., deceased.

INDIAN MEDICAL SERVICE ANNUAL DINNER.—The annual dinner of the Indian Medical Service will be held at the Hotel Cecil on Wednesday, June 14th, at 7.45 P.M., Surgeon-General W. R. Browne, C.I.E., being in the chair, when the service will have the honour of entertaining General Sir Beauchamp Duff, K.C.B., K.C.S.I., K.C.V.O., Military Secretary, India Office, as its guest. Officers intending to be present should communicate without delay to the honorary secretary, Lieutenant-Colonel P. J. Freyer, 27, Harley-street, London, W.

ON May 10th a public meeting was held in the Hoare Memorial Hall, Westminster, by the Medical Missions Department of the Society for the Propagation of the Gospel. All the speakers—the Bishop of Shantung (chairman), Bishop Montgomery, Father Russell, and Mrs. Scharlieb, M.D.—pressed upon the meeting the value of medical work in connexion with missions. Women medical missionaries are very badly needed, especially in such countries as India, where owing to religious and social prejudices women are unable to avail themselves of the medical skill of male practitioners. It was pointed out at the meeting that the present serious deficiency of medical women available for mission work led directly to the under-staffing of hospitals for women with its evil effects on the patients and the medical missionary women. The medical missions committee therefore confidently appeals to the public, and especially to the young women of the country, to help it to right this serious wrong. The committee asks that at least five young women should come forward annually to commence medical training, basing its appeal not only on religious and philanthropic grounds, but on the fact that "medical mission work offers an unrivalled field for the observation of disease and is by far the best training that a young practitioner can enjoy."

Correspondence.

"Audi alteram partem."

THE PROFESSION AND THE INVALIDITY BILL.

To the Editor of THE LANCET.

SIR,—The Chancellor of the Exchequer has announced that the remuneration for medical attendance on all classes of diseases, whether self-acquired, inherited, or inflicted by the will of God or man, in all wage-earners between 15 and 60 years of age in receipt of incomes under £160 shall be 4*s.* per head.

The population of this country is 44,000,000 and the medical practitioners 30,000, and the paupers 22 per cent. of the population. In 1910 the number of persons in receipt of incomes over £160 was 596,380 = 19·8 to each practitioner. Allow, for the sake of argument, £10 yearly for medical attendance on each, including the wife and family. This is less than £200 for each practitioner. If the private families be taken as a man, wife, and two children, then the gross number of private patients 2,384,000 and paupers 9,680,000 is 12,000,000 persons in round figures whose medical attendance is provided for. Take the remainder of the population—32,000,000—and, for the sake of argument, pay 4*s.* a head for medical attendance (1 to 1222), the pay received would be £244 per practitioner per annum, which, with private practice as above, would total £442. The rich and the poor do not, however, live together nowadays. Some neighbourhoods are residential, others working-class. Many persons who have not given much thought to the matter are of opinion that the latter districts are confined to urban areas. This is, however, not so. The writer is living in the heart of the southern counties, about midway between east and west and nine miles from the nearest town.

A slight review of the conditions in this neighbourhood may be of interest. The immediate district contains 3008 inhabitants scattered over an area of ten miles one way and eight the other. Roughly, about 50 persons have incomes of £160 per annum, excluding the four or five wealthy squatters who have bought up or rented estates in the district. These get their medical attendance, like their other requirements, from a distance, usually London. There were also 115 paupers medically attended between January, 1910, and January, 1911. This makes a total of 170 persons. 3008 − 170 = 2838. There are two practitioners to whom it is to be presumed the inestimable privilege of attending at 4*s.* per head may be offered—i.e., 1419 persons, producing £283 16*s.* each per annum. Presume that 50 private families be equally divided between the two practitioners, but not, alas, at £10 per family. Glancing at the books the £10 accounts are few and far between. And why? Because this is a rural population and the upper middle-class element is conspicuous by its absence. It can be taken that the average in purely rural districts is nearer £5 than £10, and very properly so. £5 on £250 per annum is 2 per cent. on the total earnings, whereas 4*s.* a year on £1 a week is less than ½ per cent.

Taking the amount, then, at £5 per family, the earnings from this source per practitioner are £125. Put the public and parish appointments, not clubs, at £100 a year and divide by 2. The items and total below would be the earnings of each practitioner:—

	£	*s.*	*d.*
From appointments	50	0	0
From private patients	125	0	0
From rest of population at 4*s.*	283	16	0
	£458	16	0

For the last five years the writer has averaged in getting about to patients in the district 10,000 miles each year and has received about £600 per annum. By the proposed scale of pay he might receive £458 16*s.* Divide this into 10,000 and he does over 21 miles travelling for £1, under 1*s.* a mile, the same pay as a jobmaster gets for a horse and trap and an uneducated man to drive. Nothing whatever is allowed for medical skill or knowledge or the interest on capital expended in acquiring the same. But this is not the worst of the Bill. It proposes to put all wage-earners under medical payments and benefits, and to have practically no wage limit upwards as regards this section.

The Chancellor of the Exchequer stated in an interview last week that he saw no reason why persons earning small incomes of £500 or even £600 should not pay for and enjoy the medical benefits. If the figure be taken as £500, then a further number of 596,386 is taken off the list of paying patients, leaving 73,722 to be divided among 30,000 practitioners—about 2½ per practitioner. This would abolish in this neighbourhood private practice altogether. As a matter of fact, one of the great friendly societies, the Hearts of Oak, which has no wage limit upwards, has been successfully kept out of this neighbourhood until five years ago. Since then it has succeeded in getting a medical officer, and the result is that the small tradesmen, publicans, local officials, &c., which form the backbone of a small country practice, can now obtain its medical benefits. It has not yet, however, inspired confidence in these benefits in every breast. Now it is proposed that the weight of the British Government be thrown into the scale against the hardest driven man in the United Kingdom, the country doctor, who works seven days a week and a good few nights as well. In this district, were the £500 standard adopted, the amount earned—if men, women, and children were all included and the Poor-law pay done away with—would be the half of 3000 at 4*s.*, £300 each practitioner per annum. The very idea of such a change has unsettled the capital value of the medical man's business. A good country practice has always been worth at least two years' purchase. Where is the investor who will pay this price when an Act of Parliament, if passed, will at best reduce the value one-half and may render it worthless? What security will the practitioner have that his patients will not be forced to leave him by Governmental pressure, aided by the trades unions and friendly societies, to place themselves under the care of a party-appointed official, whose suppleness and neediness will make him promise anything in order to get the job? As a profession, what can we do to stem the tide of disaster? We have, alas, no Incorporated Law Society to forbid our members underselling their brethren. We have, however, a British Medical Association, medical societies, great universities and corporations, and special bodies devoted to the defence of their individual subscribers, such as the Medical Defence Union and the London and Counties Medical Protection Society.

Is it too much to expect them to move in our defence? Will the great specialists and leaders of the profession see their poorer brethren sweated to death without a word of protest? Can we not demand that the General Medical Council, which has never looked with a kindly eye on contract practice, shall consider whether or not any member of our profession agreeing to work on such terms be guilty of conduct infamous in a professional sense?

I am, Sir, yours faithfully,

May 15th, 1911. TWENTY-FOUR YEARS A PRACTITIONER.

*** We refer to this letter in a leading article. Our correspondent's figures are rough, and his reading of the Chancellor's words seems to us unwarranted, but his arguments and suggestions are absolutely sound.—ED. L.

"THE LANCET" REVIEW OF THE "ANNALS OF TROPICAL MEDICINE AND PARASITOLOGY" (VOL. IV., NO. 4, MARCH, 1911).

To the Editor of THE LANCET.

SIR,—I think it is my duty to give a short reply to the criticism of Article 2, "A Case of Sleeping Sickness Studied by Precise Enumerative Methods," in your columns of May 13th, as there seems to be some misunderstanding with regard to the explanation of the trypanosome cycle given by Major Ross and myself. It is stated in your columns that "the authors appear to disagree with the explanations of Massaglia, Thiroux, and others with regard to the explanation of the periodic increases and decreases in the number of parasites in trypanosomiasis. One of their expressed opinions offered as an alternative is that '*the increase of parasites is due to their sudden and active multiplication.* The presence of numerous dividing forms would seem to support this statement.' The italics are theirs. Surely this can

hardly be taken as an explanation; it means no more than that the multiplication of the parasites produces more parasites."

From these remarks it is quite evident that our explanation of the increase and decrease of trypanosomes has been entirely misunderstood. In the first place, we do not disagree with the explanation of Massaglia, &c.; in the second place, we do not give the alternative explanation that "the increase of parasites is due to their sudden and active development." We have, I think, given our explanation quite clearly in the last page of our article, which I cannot do better than quote, as follows:—

> It would seem, therefore, that the explanation may be reduced to some of the following causes, all of which may come into play.
> 1. The increase of trypanosomes is due to their active multiplication, the rate of multiplication depending on the following conditions: (*a*) The liberation of a reproductive stimulant from the trypanosomes of the previous fall. (*b*) The small number of leucocytes, especially mononuclears. (*c*) The habituation of the trypanosomes to their antibodies. (*d*) The absence, or the diminution of antibodies to the trypanosomes.

(*a*), (*b*), (*c*), and (*d*) are therefore our explanations of the increase of trypanosomes. (*c*) and (*d*) are Massaglia's explanations. (*a*) and (*b*) are, so far as we know, original further hypotheses put forward by Major Ross and myself. In a somewhat similar way we explain the decrease of trypanosomes. Again, in the criticism of Article 3 by H. B. Fantham and J. G. Thomson it is stated that "the authors, unlike the authors of the preceding paper, attribute the periodicity to variations in resistance on the part of the host, probably due to the formation of antibodies," &c. Here, again, I would like to point out that the authors of Article 3 do not disagree with our hypotheses regarding the periodicity. Their work was intended to confirm and extend the information obtained in our research, and the fact that they found rounded bodies in the internal organs, during the fall in the number of trypanosomes, does not contradict any of our explanations.—I am, Sir, yours faithfully,

D. THOMSON.

School of Tropical Medicine, Liverpool, May 16th, 1911.

GENIUS AND INSANITY.

To the Editor of THE LANCET.

SIR,—In his recent and highly instructive lecture[1] Dr. Mott leaves undecided the vexed question as to the correlation of genius and insanity. To those who are disciples of the Mendelian hypothesis of the transmission of unit-characters, the elucidation of the problem is simple. A unit-character is unsplittable and unblendable. As Professor Punnett puts it: "The individual is an aggregate of unit-characters, and individuality is the expression of a particular aggregation of such characters. Though often reacting upon one another, the factors on which these characters are based behave as independent entities during the hereditary process, and heredity in consequence we may regard as a method of analysis, enabling us to judge of the number and condition of the unit-characters which go up to make the individual." Viewing the matter in this light, there is no necessary correlation of genius and insanity, for each unit-character may be derived from a different source, and this appears to be the solution of those cases of genius combined with insanity, the ancestral data of which are available for scientific investigation.

To advert to another matter discussed in the same lecture, it is somewhat surprising to find Dr. Mott accepting as a fact the alleged epilepsy of Julius Cæsar. What are the facts? The external evidence is mere rumour, and amounts to what Lord Beaconsfield would have stigmatised as bar-parlour talk. What of the internal evidence? Julius Cæsar was the greatest man of the Roman world, and had to deal with problems that would turn the brain of the modern politician. He was a great general, a far-seeing statesman, an eminent man of letters, and as an orator he was reckoned by his contemporaries to be second to Cicero alone. Is all this compatible with classical epilepsy? Yet Dr. Mott on such flimsy evidence proceeds to build up a neurotic pedigree "beginning with the great Julius, an epileptic, and ending with Nero." Of such stuff dreams are made of. But assuming for the sake of argument that Cæsar was afflicted with the *morbus comitialis* (as it was then called), is it not more reasonable to suppose that the condition was of the nature of Jacksonian epilepsy, the result of a wound received in battle? This, however, as an acquired character, would have no significance in heredity.

Dr. Mott also claims Napoleon as an epileptic. There is no historical evidence of Napoleon having had "fits" until after his escape from Elba. He was then 46! We have, however, the testimony of his medical attendants that in later life his normal pulse-rate was 40. This would suggest that the so-called epileptic seizures were in reality attacks of "heart block" (Stokes-Adams disease). It is known that the *petit caporal* was a veritable Don Juan, and likely enough he had contracted syphilis—a disease very prevalent on the Continent at that time.

I am, Sir, yours faithfully,

Wimpole-street, W., May 15th, 1911. KENNETH CAMPBELL.

[1] THE LANCET, May 13th, 1911, p. 1251.

SOME UNUSUAL EFFECTS OF PERFORATED GASTRIC ULCER.

To the Editor of THE LANCET.

SIR,—In your issue of May 13th, under the above heading, Dr. W. P. S. Branson and Mr. T. P. Legg describe and depict a case of "pronounced lateral curvature of the spine." The case is so unusual that I venture to comment upon it. By "pronounced lateral curvature" do the authors imply that there was actual bony deformity? Cases of scoliosis are divided into two groups, the postural and the osseous, the distinction between the two depending on whether the deformity entirely disappears when the spine is fully flexed. If it disappears the case belongs to the postural group; if it does not disappear, to the osseous. An inspection of the photograph (see p. 1274) would apparently show that there was moderate osseous deformity; but as such photographs are often misleading definite information on this point is required. Assuming, however, that osseous deformity was present, and indeed pronounced osseous deformity, is it clear that it had been produced in 11 months? In a man of the patient's age, namely 37, the production of such deformity in so short a time is unknown. In adults, after severe operations for empyema, and after fracture of the femur or tibia resulting in shortening of a limb, though postural scoliosis is produced almost at once, osseous scoliosis takes many years to develop, and often never appears at all.

In this case, upon what does the evidence for this very rapid onset of deformity rest? Merely upon the unsupported statement of the patient, a stoker, who "asserted confidently that the curve was but lately acquired, and attributed it to the attitude of flexion towards the left which his pain had compelled him to assume for many months." Similarly mothers are continually bringing for examination their scoliotic children, and confidently ascribing, as due to a fall last week, a hump as large as a camel's. If there be reliable evidence to show that before the onset of the pain, 11 months previously, the patient was perfectly straight, it should certainly be published, for the rarity of such a case cannot be questioned. I fear, however, that no such evidence will be forthcoming and that the case must be regarded as one of long-standing scoliosis, complicated by gastric ulcer.

I am, Sir, yours faithfully,

London, May 15th, 1911. PAUL B. ROTH, F.R.C.S.

INTUSSUSCEPTION IN AN INFANT REDUCED BY AN AIR ENEMA.

To the Editor of THE LANCET.

SIR,—There are a few interesting points in the following case which I think make it worth recording. The child was a male and when I first saw it, a week after its birth, was quite up to the average in size and weight for an infant of that age. It was being fed at the breast, and, as the mother told me, was the best child she had ever had and did not give the least trouble. It had been suddenly seized with pain early that morning and had since been vomiting all its milk. They produced two napkins which were soiled with what looked like blood and stringy mucus. Inquiry elicited the fact that the last proper motion took place the evening previous about 6 P.M., and that the child vomited for the first time shortly after the pain seized it that morning. The child did not seem to be in any great pain when I saw it but

every few minutes it vomited a small quantity of bile-stained fluid. The abdomen was soft and on palpation I failed to discover a tumour of any kind. However, whilst palpating in the right iliac region the child became very restless and began to whimper.

I diagnosed the case as one of intussusception, either ileocæcal or ileocolic, and before leaving I told the mother that it would be possibly necessary to open the abdomen in order to put the child right. When I returned a few hours later the condition of affairs was unchanged; the child still continued to vomit bile-stained fluid at intervals, and although it attempted to suck when put to the breast, the smallest quantity of milk was immediately ejected.

The parents absolutely refused to allow an operation, nor would they allow me to give the baby chloroform. I attempted to reduce the intussusception by means of a warm-water enema, but the tenesmus was so great that without an anæsthetic I found this method to be impracticable. I was about to give the case up as hopeless, when I thought I might try the effect of pumping air into the bowel. So I laid the infant upon a pillow in the centre of the kitchen table, and by means of an ordinary Higginson's syringe I pumped in air till the abdomen assumed a distinct fulness. As there was no means of ascertaining whether reduction had taken place or not, I returned the child to its mother and left the house fully convinced that under the circumstances there was very little hope of the child living. Nevertheless, when I called the next day I was agreeably surprised on being told that the child had vomited only once or twice since I left on the previous day, and that most of the milk was being retained. The mother showed me a napkin which had recently been soiled with something very like meconium. The next day the napkins were stained a distinct yellow, and the child had ceased to vomit. It is now about 5 months old and looks quite healthy and contented. I do not know if an intussusception has been reduced by an air enema before, but on this occasion I think the end quite justified the means.

I am, Sir, yours faithfully,

Aberdeen, May 7th, 1911. J. WILSON, F.R.C.S.

THE INTERNATIONAL PLAGUE CONFERENCE AT MUKDEN.

(FROM OUR OWN CORRESPONDENT.)

(*Continued from p. 1311.*)

FOURTH DAY (APRIL 6TH).

Professor SHIBAYAMA (Japan) read a paper giving the Results of his Animal Experiments with Strains of Pneumonic Plague Bacillus isolated from the Harbin and Mukden epidemics, which showed that there was little or no connexion between virulence and toxicity. In conclusion, he spoke on the dispersion of the plague bacillus by coughing. It could not be denied that infection from pneumonic plague in this epidemic was conveyed almost without exception from person to person. The following experiments were made under the supervision of Professor Kitasato by Dr. Tojoda and Dr. Jasuda. A plague patient was laid down sideways with his head fixed. Twenty agar plates were laid before his face in different positions and at different distances and the covers were removed. After the patient had coughed the plates were re-covered and placed for two days in the incubator at a temperature of 30° C. Plague bacilli were developed on three of the plates. A second trial was made and plague bacilli colonies were developed upon four of the plates at distances of 1 foot, 1½ feet, 2½ feet, and 3¾ feet. Further experiments were made to ascertain whether animals susceptible to plague could be easily infected from the neighbourhood of sick people. For this purpose six guinea-pigs in wire cages were placed at varying distances from the patient. After 12 hours the animals were removed to the laboratory. All remained in perfect health. It seemed, therefore, that infection of animals by inhalation was difficult.

FIFTH DAY (APRIL 7TH).

Dr. KOULECHA (Russia) read a paper on "Morbid Anatomy, Especially in Relation to the Mode of Infection in Plague Pneumonia." He had dissected 28 plague corpses at Harbin and especially noted the modes of infection. From the results of these necropsies and microscopical examination of the tissues he found that pneumonic plague was a septicæmic disease in which a decided overflooding of the blood and the lymphatic system with bacilli could be observed. Infection entered through the mouth, affecting *en route* the tonsils, mucous membrane of the trachea, bronchi, and neighbouring lymphatic glands, and passed from these into the blood. The lungs would appear to be infected secondarily from the blood. This he inferred from the great accumulation of plague bacilli in the perivascular spaces. Pneumonic plague was a lobar pleuro-pneumonia of hæmatogenic origin, and should be put in the same category as croupous pneumonia.—Dr. FUJINAMI (Japan) confirmed Dr. Koulecha's findings, but said that while it was certain that infection could start from the mouth it could also start from the trachea and bronchi. Masses of bacilli could be found in the perivascular tissues which were introduced by the lymphatic vessels and to such an extent as to give the appearance of an accumulation of carbonaceous material.—Dr. R. P. STRONG (America) asked if in the primary tonsillar cases the epithelium was greatly eroded, to which Dr. Koulecha replied that in one of his sections, on view in the room, such erosion could be seen.—Professor ZABOLOTNY (Russia) said it had not as yet been sufficiently proved how many cases were of hæmatogenous and how many of direct pneumonic origin. He agreed with Dr. Fujinami in the question of carbonaceous penetration of the peribronchial glands. In the first stage of plague pneumonia there were no bacilli in the blood.

Dr. KOULECHA'S paper was taken out of the order of the subjects in the programme, as the speaker had to return to Harbin. The Conference then returned to the epidemiological section of its work.

Dr. C. T. ANDREW (Ching-wan-tao) read the results of his observations on 3000 living rats in North China, all of the species mus decumanus. He had never found mus rattus. He had noted a seasonal flea prevalence, the highest number of fleas occurring in September, October, and November. Of many thousands of fleas the only species noted was pulex cheopis.—Dr. G. F. PETRIE (Great Britain) had found both pulex cheopis and ceratophyllus unisus among the fleas examined in Mukden.—Professor KITASATO said that of over 30,000 rats examined in South Manchuria 6 per cent. were mus rattus.

Dr. WU LIEN-TEH, the President, referred to the observations of some Chinese doctors on his staff at Harbin during the epidemic. It was reported that over 300 pigs and 400 horses and mules had died. These, of course, might have died from other causes but it was a significant fact that the Japanese doctors had found the case of a donkey which had died and had been proved microscopically and culturally to have died from true plague. After further discussion,

Dr. R. A. P. HILL (Peking) read a paper on "The Character of Epidemic Curves as illustrated in Cities and Districts," and showed many charts. Probably only extremes of temperature had much effect. Some of the charts showed a regular wave motion corresponding to the incubation period.

In the afternoon Professor KITASATO took the chair at a Bacteriological Session. The discussion opened on "The Cultural Characteristics of the B. Pestis Isolated in Manchuria." The general opinion was that little or no difference existed between the Harbin and other bubonic strains in bouillon, except that there was perhaps more mucus in the former.—Professor GALEOTTI said that the presence of more or less mucus in the culture depended upon the amount of carbohydrates in the bouillon.

Professor ZABOLOTNY spoke upon Agglutination. He said that agglutination was necessary to diagnose the bacillus of plague. He demanded a high standard serum with high agglutination power as being necessary for correct diagnosis. Personally, he did not use the serum of patients, but took the serum of horses immunised with many cultures, and thus obtained this high degree of agglutination.—Dr. STRONG asked if anyone had found agglutinins clinically in the blood serum of patients, and Professor SHIBAYAMA said that there had been three cases in Dairen. They had had 40 c.c. of plague serum and were cured, and agglutination tests were made 45 days afterwards. They then found agglutinations in dilutions of 1–50 and 1–100 positive.—Dr. MARTINI (Germany) said that as far as he could remember

he had never heard of such a high agglutinating power. Generally 1–5 or 1–10 was what he had heard of.

Dr. STRONG and Dr. MARTINI discussed Toxins. They agreed with Professor Galeotti that plague toxin was an endotoxin and not a soluble one, that it was contained in the bodies of the bacteria, and became set free in bouillon culture by plasmolysis and plasmoptysis.—Professor ZABOLOTNY held to the view that it was a soluble toxin.

With regard to virulence the general opinion was that there was little difference in virulence between pneumonic and bubonic strains beyond the accident of lung infection. The lungs offered a nidus for the bacilli that greatly increased their virulence when they gained entrance into them.

SIXTH DAY (APRIL 10TH).

Dr. CH. BROQUET (France) read a paper on a Way of Conservation of Plague Organisms for Diagnosis. By employing a solution of neutral glycerine at 30° C., 20 c.c., calcium carbonate 2 grammes, and distilled water 80 c.c. for the immersion of suspicious plague organs or rats, &c., the specimen could be sent to a laboratory from far-distant stations for examination, and a diagnosis could be obtained more quickly than by the method of Albrecht and Ghon.

Dr. STRONG spoke on "The Infectivity of the Breath," giving the results of experiments he had carried out at Mukden. Plates exposed at distances of from 3 in. to 4 ft. showed that in cases without cough during exposure no bacilli were encountered at the greater distances. In 39 instances the plates were exposed before patients who did not cough during the time of exposure, and notwithstanding the fact that many of the patients suffered with marked dyspnœa and advanced œdema of the lungs, in only a single instance was the plague bacillus encountered in one of these plate cultures, although in a number of the experiments the surface of the media was visibly wet by the vapour arising from the breath. In patients who coughed during the time of exposure in most instances colonies appeared on the plates. In some cases more than a hundred colonies were obtained upon the cultures after a single cough, sometimes in almost pure culture. His conclusions were that (1) during normal and dyspnœic respirations of primary pneumonia plague cases plague bacilli were not usually expelled by means of the expired air; and (2) during coughing in such cases, even when sputum visible to the naked eye was not expelled, plague bacilli in large numbers might become widely disseminated into the air surrounding the patient. It was possible that a vigorous cough might send out droplets to a distance of certainly several yards.

SEVENTH DAY (APRIL 11TH).

Dr. STRONG discussed the subject of Protective Vaccination. He dealt with living attenuated cultures of B. pestis. He was of opinion that vaccines made from dead bacilli were of very little use in pneumonic plague. He wished the conference to give this matter its careful attention, as his experiments in Manila all pointed to this method giving good results. His conclusions were: (1) Protective vaccination with properly attenuated cultures is as safe as vaccination against small-pox; (2) it gives rise to a degree of immunity against plague; (3) in this epidemic other vaccines have been frequently shown to be insufficient; (4) it should be the duty of this conference to investigate the use of such attenuated cultures; (5) a suitable culture should be recognised as an international culture and placed in the hands of institutes such as those of Pasteur and Koch, from which it could be obtained at all times; and (6) in vaccinations by this method these standard cultures should be used.—Professor GALEOTTI (Italy) advocated the vaccine of Lustig and Galeotti for the following reasons: (1) The pure toxin can be dried and standardised; (2) the toxin and no other substance is used in the vaccine; and (3) the plague nucleo-proteid can be stored in sterile condition. He thought that for pneumonic plague pure endotoxin alone should be used, and he advocated further study. He could not see any reason for using living cultures, inasmuch as dead bacilli could stimulate tissue to produce antibodies. This was done by endotoxin of dried bacilli.

Dr. MARTINI, on the subject of Serum Therapy, referred to his guinea-pig and rat experiments with quantities of serum equal to 1/60th the body weight, and said he could produce a certain degree of immunity, lasting not more than five days. In man a dose of 100 c.c. serum must be used for protective purposes. Small doses were useless. Unless the lung was infected serum was useless. He said it would be advisable that all those exposed to infection—doctors, nurses, &c.—should be immunised with serum. When 100 c.c. were given this dose should be repeated soon afterwards. The prognosis would be fair if the inoculation were made in the incubation period not later than six hours after the entrance of infection. If, however, blood were present in the sputum, serum-therapy was useless. As regarded the present epidemic he considered the protective value of serum small.—Professor ZABOLOTNY (Russia) said his experience with serum had not been promising. He had used quantities up to a litre without success. It had only the effect of prolonging the illness.—Dr. P. HAFFKINE, who had used serum in the Plague Hospital at Harbin, had had somewhat similar results. In septicæmic cases it had had no action. The preventive effect in some cases was clear, though the immunity derived did not last more than five days. Large doses, over 150 c.c., must be used.

Professor SHIBAYAMA, discussing the Examination of Sputum, spoke on the date when the sputum contained plague bacilli in pneumonic plague. At the onset of the fever, he said, there was little sputum and the bacilli were difficult to find. Later, when blood appeared, they could usually be got in almost pure culture.—Professor ZABOLOTNY strongly advised Gram's method in examination of the sputum. He had often noted mixed infections with other organisms microscopically. He had also seen a bipolar bacillus, Gram-negative, in sputum which was shown not to be plague. Involution forms had no relation to virulence. It was the general opinion that these Gram-negative bacilli should be further studied, as it was a point of much importance.

Professor ZABOLOTNY, dealing with Examination of the Blood, said he was usually able to get blood cultures 48 hours before death. At least 1 c.c. of blood must be used for the test. In this way diagnosis could be made earlier than by sputum examination. In cases of recovered bubonic plague, agglutination could be got in dilutions of 1 in 25 and 1 in 50 during the second and third weeks. Agglutination experiments and those with deviation of complement were of little value in pneumonic plague.

Dr. P. HAFFKINE called attention to the very rapid cases in which B. pestis was found on the first day of illness. The six cases recorded by him all died that day.

On the subjects of lung and spleen puncture there was no discussion.

(To be continued.)

Tarabagan Fleas.

An interesting and, it may be, an important discovery has been made by Dr. G. F. Petrie, of the Lister Institute, one of the British delegates to the Conference. So far as is at present known, no flea infesting the tarabagan has been noted or described. Dr. Petrie had the opportunity of examining for fleas 12 tarabagans sent direct from Manchuria to Mukden. Thirty-five fleas were found on these animals, giving an average of nearly three per animal. From one of the tarabagans 12 fleas were taken. Ticks were also observed on them. Since the present may be regarded as the season of least prevalence for fleas it suggests that tarabagans during the flea-breeding season are infested with fleas. The fleas from the tarabagan are unusually large, and from superficial examination appear to resemble the fleas belonging to the genus hystricopsylla. This observation may have an important bearing on the spread of plague amongst these marmots and on the transmission of plague from the tarabagan to man. He also mentions it as a significant fact that among the four Russian companies which handle the raw freshly-killed tarabagan skins (over 2,000,000 annually) at Manchouli, where the epidemic broke out and raged unchecked, not a single employee was infected.

Plague Infection through Tea.

In reference to the question of the possibility of plague infection through tea, which has recently been brought up in our columns, our correspondent writes that "there has been no evidence before the conference to prove that infection has been carried by inanimate material."

THE DRAINAGE PROBLEM AT MONACO.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

THE Principality of Monaco has always been governed by the sense of *noblesse oblige*. With the cost of local administration and public works covered by the subvention the Casino must pay in return for the monopoly it enjoys, the Government of the Principality has been able to take the lead and set a useful example to the neighbouring health resorts.

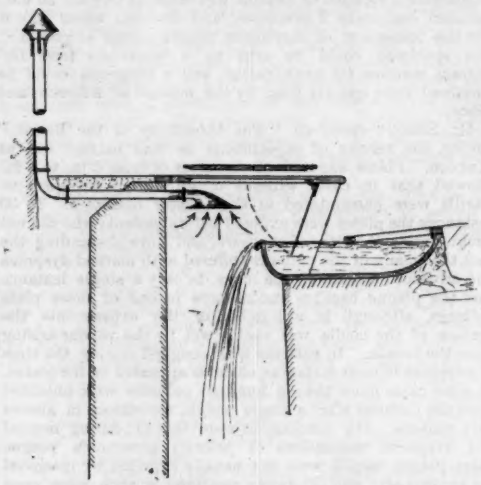
Early Construction of Sewers.

As the knowledge of the principles of drainage spread, more modern and improved methods were early adopted in the Principality. Thus, and previous to the cholera epidemic of 1885, attempts had been made to construct sewers in the old town of Monaco. Here we have the narrowest streets, the oldest buildings, and therefore the greatest need of perfect drainage to counteract the want of light and space. But the picturesque red rock of Monaco is very hard, and it was an expensive and difficult matter to cut down into such solid stone. To-day all the quaint and ancient houses of the old historical town have modern soil pipes and drain into carefully constructed sewers. It was not, however, till 1894 that the English system of draining everything into the sewers was adopted. The low-lying district of the Condamine was the principal obstacle. This part of the Principality by natural gravitation drained into the historic port of Hercules, befouling its tideless waters. However, the difficulty was finally overcome by placing two Shone ejectors at the lowest level. By this means the sewage is raised some 60 ft., and it can then flow by gravitation in a closed iron main which passes behind the Monaco rock to the little Bay of Fontvieille, where there is one of the principal sewer outfalls. Here great trouble was experienced in carrying the sewer down nearly 50 ft. below the surface of the water. Nevertheless, all the difficulties were overcome so as to secure an outfall in deep water.

The old sewers of the Condamine district that used to drain into the port were in a deplorable condition. They had all to be rebuilt, and this work was commenced in 1889. It was supposed to be completed in 1897, but there are still one or two corners untouched. This is notably the case in a part of the rue Grimaldi, where there yet remain a few cesspools to remind the inhabitants of the abominations that used to prevail in the olden days. Thus, according to the last figures available, there were, from March, 1909, to March, 1910, just 81 operations performed for the emptying of cesspools. This does not mean that there were 81 cesspools remaining in the Principality, for in some houses the cesspool is emptied every month. Therefore it may be said that practically the cesspool system is abolished. Instead of cesspools there are now 20½ kilometres, or nearly 15 miles, of sewers. The tendency has been to build larger sewers than were needed, but as there is nearly always a very good fall the risk of deposits and stagnation is not so great. In one street in the Condamine the fall is 8 millimetres per metre, but as a rule it exceeds 1½ centimetres per metre. Indeed, to my mind, the fall is excessive and it gives rise to certain dangers that are not sufficiently considered. To ensure the cleanliness of these sewers 52 automatic flush tanks have been placed in suitable positions, and they each discharge every day 20 cubic metres of fresh water into the sewers. The capacity of the tanks varies from two to five cubic metres, and as soon as they are full the water is discharged automatically, thus making a good flush. But in spite of this, and as a result of their great size, the sewers are not thoroughly self-cleansing and therefore men are occasionally sent down to scrape the sides and remove deposits.

Need of Ventilation.

All minor criticisms would, however, be of little importance—indeed, it is well-nigh impossible to find perfect sewers anywhere—but for the extremely grave fact that the sewers of the Principality are not ventilated. At four of the highest points there are four, comparatively speaking, large ventilating shafts. These were necessary, and are always necessary where there are very steep gradients. But if these four shafts render service in their immediate neighbourhood they cannot be supposed to ventilate 15 miles of sewers. Such a pretension is too preposterous to be discussed. Obviously the scheme for the drainage of the Principality was based on the conception that every sewer inlet would serve as a sewer ventilator. This meant ventilating the sewers into the streets at the level of the gutters, a system which has the advantage of enabling the public to perceive at once when the sewer is out of order. That sanitary sentinel, the sense of smell, is awakened near the spot where the water from the gutter runs into the sewer; complaints are made, and something has to be done. On the other hand, such complaints are not to the credit of a health resort; and the late M. Tschirret, chief of the roads department, was requested to suggest some other method. He consequently invented a street gully or "sewer mouth," to use the more exact French term, which is called the Système Kruger et Tschirret. This consists, as will be seen by the accompanying sketch, of a water-trap sealed



Street gully (Système Kruger et Tschirret) consisting of a water-trap sealed by a dip suspended on hinges.

by a dip suspended on hinges. If there is a great rush of water to the sewer, this metallic valve, which dips into the water, is raised by the pressure and lets the water pass freely into the sewer. When the rush and pressure cease the valve falls of its own weight and is so suspended as to resist any pressure from the sewer to the street. It not only prevents the air from the sewer travelling upwards into the street, but, in the event of floods, would also check the flow of water from the sewers to the street. Nevertheless, by thus preventing the ventilation of the sewers on a level with the causeway, it was never proposed to suppress sewer ventilation. On the contrary, and as the drawings made at the time clearly prove, the late M. Tschirret fully understood that other methods of ventilating must be provided. Therefore, behind the trap that closed the sewer opening on to the gutter and prevented its action as a ventilator, M. Tschirret placed a hood connected with a pipe to receive and carry sewer air up to the roof of the nearest house or what other high altitude was accessible.

It will scarcely be believed that this latter and by far the most important part of the apparatus has been altogether omitted. Delighted at having stopped the unpleasant whiffs of sewer air that occasionally invaded the streets, no one thought of providing other means of ventilation. The assertion was made, and is printed and spread about broadcast, that the sewers are ventilated by shafts placed on the highest points of the sewerage system. It does not seem to have occurred to anybody to ask how many of these shafts were erected and whether every part of the sewerage system was in communication with them. No one made any attempt to measure with an anemometer the rate at which the air travelled out of these shafts and, comparing the volume thus discharged with the cubic measurements of the sewers, decide whether the air within the sewers was changed with sufficient frequency. Still less was it thought necessary to secure samples of the sewer air for analysis.

As a matter of fact, nobody knows what happens within the sewers. There have been no scientific investigations whatsoever. All that can be said is that there must be some accidental ventilation occurring somewhere or another, otherwise the sewers would have blown up before now. But this is a most extraordinary instance of inexplicable neglect or forgetfulness by the side of lavish expenditure and exemplary devotion and zeal for public health services. It would, for instance, be quite safe to say that nowhere in the world are the streets better kept, watered, swept, and cleaned than in the Principality of Monaco. How, then, can it have have happened that the ventilation of the sewers was overlooked and forgotten?

Institution of Bureau d'Hygiène.

Such strange omissions may perhaps arise from the fact that the public works department does not issue an annual report. If information is required as to what was done in a certain year, it is necessary to trust to the memory of some old functionary, or to ransack a vast collection of papers and lose much time. Formerly a sort of annual report was prepared, and though it did not get beyond the MS. stage, still it was something to which reference could be made. But during the last 15 years even this modest record is no longer kept. Consequently, when a new chief is appointed to the department, he has no quick means of ascertaining what has been done and what still remains to be done; he might therefore conclude that certain public works were terminated when, as in the case of the sewers, an important part of the undertaking had not yet been taken in hand. Thus, when I went to Monaco in 1906 to report upon the slaughter-house, I was assured by the veterinary surgeons that the authorities recognised the abattoir was altogether out of date. Then I was also told that a scheme for the construction of a modern abattoir was actually under consideration, and doubtless such was the case. This does not prevent the fact that to-day these projects have been forgotten, and I could find no trace of the scheme for a new abattoir.

A *bureau d'hygiène*, however, as suggested by the great French Public Health Act of 1902, has now been established at Monaco. It has barely been in existence for two years and is still quite raw and new in the exercise of its functions. Indeed, these are not yet clearly defined, and rules and regulations are still in the theoretic stage of verbal construction. Thus, though the services for the notification and isolation of infectious cases and the necessary subsequent disinfection seem to be well and thoroughly organised, there are no means as yet for testing domestic drains. Soil pipes may leak or not leak; no one can tell. This is the more serious as there is no law restricting the practice of plumbing to fully qualified plumbers. The sewers not being properly ventilated, the escape of sewer air into private dwellings through defective plumbing is all the more likely to occur, and the Principality is not altogether free from typhoid fever. Wherever cases of typhoid fever have occurred the drains should be tested. It would be very surprising if serious defects were not discovered.

What is now Required.

The whole question of the public sewers and the private or domestic drains throughout the Principality needs the fullest and immediate attention. If the Principality alone had to be considered the matter would not be so urgent. But to the north, in France, though touching the Principality, a new town is rapidly being built. It is called Beausoliel, and has already 3000 inhabitants. Constructed on the slope of the mountain immediately behind the Casino gardens and the Moulin district, it must of necessity drain into the sewers of the Principality. If the buildings at Beausoleil and the population increase with anything like the rapidity achieved in the Principality itself, the inhabitants will be there before proper provision has been made to receive them. In such a case a dangerous situation will have been created. This is the more serious as at Beausoleil the population will not be as prosperous, orderly, and clean as is the case within the Principality. An epidemic could therefore more easily take root at Beausoleil; and then with all the drainage of Beausoleil passing through the sewers of the Principality the position would be somewhat alarming. In these circumstances, I was delighted to find that measures are now being taken to establish a *Casier Sanitaire* of all the houses at Beausoleil, on the Paris model.[1] Indeed, the *casiers* I saw were an improvement on the Paris model, for a larger, better, and more comprehensible plan of each house, including that of the soil-pipes, is given. This is done by M. Tschirret, brother of the late M. Tschirret, whose street-sewer gully is described above. As a rule, it is the Principality which sets a good example, and this the surrounding resorts follow after more or less delay. But in respect to the Casier Sanitaire it is the Commune of Beausoleil that leads the way, and it only remains to urge that the Principality should not be too long in following so good a precedent.

Fortunately, here in this most privileged Principality precautions may easily be taken and dangers forestalled. With the exception of the old town on the rock everything is new. At Beausoliel, as well as at Monte Carlo, the subsoil is almost virgin soil. It has never been built upon before; it is, therefore, clean and it would be great loss if by badly constructed sewers or house drains this healthy earth was polluted. Then, with new communities we have not only less dirt, but there are fewer powerful vested interests to block the way. None of the public health services are in private hands; they are all under the Government, and therefore they can be altered and controlled as it best suits the exigencies of the situation. There are no established interests to conciliate. When once the authorities are convinced that certain works are necessary there is nothing to prevent their carrying out the needed reforms. At the present moment the sewers need at least as many sewer ventilators as there are sewer mouths. Till these have been provided, as was obviously intended in the original scheme, the present system of drainage has not had a fair trial. It is true that no one seems to have made any scientific experiment to see if the system worked properly or not; but now that there is a *bureau d'hygiène* such matters cannot be indefinitely neglected. It would be quite contrary to the spirit of public enterprise which distinguishes the government of the Principality if so important a matter remained long in abeyance. It is much more probable that the Principality will again render great public service by taking the lead in striving to work out the problem of sewer ventilation. It is a problem of unquestioned importance, yet it has only been solved in a partial and imperfect manner, so there is plenty of room for further enterprise and improvements.

CONGRESS OF THE GERMAN SURGICAL ASSOCIATION.

(FROM OUR BERLIN CORRESPONDENT.)

(*Concluded from p. 1308.*)

Moveable Cæcum (Typhlospasmus) and Chronic Appendicitis.

Professor WILMS (Heidelberg) said that the pain in cases of chronic appendicitis was caused by adhesions, which led to dragging of the appendix when the intestines were filled with fæces; sometimes also the pain was caused by a temporary occlusion due to a torsion of the colon near the cæcum. The morbid condition described by the author as "moveable cæcum" or "typhlospasmus" had nothing to do with chronic appendicitis. The pain in this condition was caused by unduly long retention of the fæces in the cæcum. By means of radiography he had found that fæces remained in the cæcum for 24 hours and longer, so that they became harder and had more difficulty in passing along the colon. The patient therefore suffered from chronic constipation. Professor Wilms was of opinion that the retention of the fæces was due to anti-peristaltic contraction of the ascending colon in connexion with spasm and slight inflammation of the cæcum, and the spastic contractions caused a dragging of the moveable cæcum and its mesentery. The diagnosis might be made partly from the clinical history, which would show the existence of chronic constipation, and partly by means of radiography. In these cases he had performed cæcopexy with good results, as the pains and the constipation disappeared in 75 per cent. of the cases. Surgical interference was indicated only when internal treatment had proved useless.

[1] See THE LANCET, Dec. 4th, 1909, p. 1709, article entitled Town Planning and the Sanitary History of Dwellings.

Professor DE QUERVAIN (Basle) said that abnormalities of the function and of the anatomical relations of the colon were often complicated with anomalies of its secretion and of its peristaltic movement. In his opinion colopexy was quite unreliable. He recommended jejunotransverscostomia when it had become obvious by radiography that an emulsion containing bismuth was retarded in the upper part of the colon for three times the normal period. He had seen complete recoveries in two cases.

Professor SONNENBURG (Berlin) said that moveable cæcum was very frequently found and did not always imply a morbid condition. He considered that the diagnosis by means of radiography was not reliable because the position in which the bismuth was left in the cæcum and the time during which it remained there were subject to much variation according to the food which was taken after the emulsion containing the bismuth. Moveable cæcum produced pains only when it was complicated by typhlocolitis, where constipation alternated with diarrhœa. Generally a patient was better off with a moveable than with a fixed cæcum, and Professor Sonnenburg could not see the advantage of cæcopexy. Typhlocolitis could be successfully treated by internal medication, and surgical interference was scarcely ever indicated.

Dr. KLOSE (Frankfort) said that he had found moveable cæcum in 10 per cent. of the post-mortem examinations which he had made. A morbid condition was produced only by torsion of the cæcum; operative fixation of the ligaments of the colon to the posterior abdominal wall was therefore reasonable.

Dr. GOEBELL (Kiel) said that cæcopexy had been successful in 9 cases out of 15. He then mentioned cases of constipation caused by megasigmoideum and Houston's valves. In megasigmoideum, which must be regarded as a slighter degree of Hirschsprung's disease, resection was advisable. For Houston valves he recommended that small forceps should be introduced with the help of the proctoscope, and that they should be left in position till they had cut through the valves.

Prophylaxis of Peritonitis.

Dr. HOEHNE (Kiel) described a procedure used in the gynæcological clinic of Kiel to prevent peritonitis from developing. One day previously to an "unclean" laparotomy—i.e., a laparotomy for infectious conditions implicating the reproductive organs—an injection of camphorated oil was given, the idea being to produce a harmless fibrinous exudation which would hinder the absorption of bacteria and would increase the bactericidal power of the peritoneum. When infectious germs happened to be conveyed into the peritoneal cavity during the operation they were fixed and destroyed by the peritoneum, and were in that way prevented from causing a general infection. Up to the present time the method had been used for 94 women who had been operated on, and of these none had died, although some of them had been operated on for abdominal cancer and other diseases in which a high percentage of peritonitis was commonly met with.

Hormonal in Paresis of the Intestine.

Dr. HENLE (Dortmund), in discussing the treatment of paresis of the intestine by hormonal, said that the difference between hormonal and physostigmine was that hormonal produced peristaltic, while physostigmine produced spastic contractions of the intestines. In five cases of severe paresis of the intestine after operations its function was restored by injections of hormonal. A permanent effect, as in experiments on animals, was, however, not produced, so that a repetition of the injection was sometimes necessary. The injection was not always harmless, as there had been instances of a rise of temperature to 39° C., sometimes accompanied with rigors.

Dr. DENCKS (Rixdorf) said that in experiments on animals he had found that the greater quantity of the hormonal was retained in the spleen. The compounds acted in from 10 to 15 minutes, and the effect was of long duration, sometimes continuing for several months. In patients suffering from chronic constipation the effect was sometimes produced after some days.

Dr. GOLDMANN (Berlin) said that he had observed a prompt action in 25 cases of post-operative paresis, but a failure in 5 cases.

Duodenal Ulcer.

Dr. NEUENDÖRFER (Hohen-Ems) said that duodenal ulcers fell naturally into two categories, in the first of which pain was a frequent symptom, beginning not sooner than three and not later than six hours after a meal; these pains might show a certain periodicity and sometimes ceased for a considerable interval. In the second category hæmorrhage was a prevalent symptom, seldom, however, leading to hæmatemesis, but rather to syncope and acute anæmia, the cause of which could only be ascertained by careful examination of the fæces. The treatment must be surgical, consisting in gastro-enterostomy with narrowing of the pylorus. He was of opinion that duodenal ulcer was more frequent than was generally supposed.

Prophylaxis of Post-operative Meningitis.

Dr. LEISCHNER (Vienna) said that Dr. Denks and himself had together studied the question whether the administration of urotropin had the effect of producing bactericidal substances in the meningeal fluid. They found that after the administration of 2 grammes of urotropin 0·02 gramme of formalin in a nascent state was present in the fluid. They further ascertained in animals that meningeal fluid with the addition of small proportions of formaldehyde made the germs decrease considerably. They proposed, therefore, to administer urotropin previously to operations on the brain and the meninges.

Intravenous Injection of Anæsthetics.

Professor VON FEDOROFF (St. Petersburg) reported that he had been very well satisfied with the results of intravenous injections of hedonal in 530 cases. He used for this purpose a solution of 0·75 per cent. strength; no undesirable complications were observed.

Professor KÜMMELL (Hamburg) recommended the intravenous injection of ether, which was, in his opinion, an ideal method of inducing anæsthesia. There was no injurious action on the lungs, the respiration being free and untroubled. Thrombosis occurred only when digalen or adrenalin was added. He had an experience of 100 cases without any accident.

Dr. HAGEMANN (Greifswald) said that hæmoglobinuria occurred after intravenous injections of ether. He was of opinion that this was due to the solution of ether being too concentrated. He had devised an apparatus in which the temperature was maintained at 38° C., so that only 4·6 per cent. of ether was retained in the solution.

Dr. VON BRUNN (Tübingen) recommended injections of scopolamine with pantopon, saying that when this was done previously to an inhalation of ether a very small quantity was sufficient to produce anæsthesia. The unconsciousness was only slight and the tension of the muscles did not completely disappear.

Dr. MERTENS (Zaloze) recommended the rectal administration of isopral, 0·1 gramme of this compound for each kilogramme of the patient's weight being given one hour previously to the administration of an anæsthetic. Anæsthesia was then produced very quickly and without excitement; and the patient generally slept for some hours after the operation.

Punctured Wounds of the Heart.

Dr. HESSE (Dresden) reported that he had operated on six cases of punctured wounds of the heart, five of which had recovered. An important symptom of an injury of the heart was hæmothorax. He uttered warnings against expectant treatment and against the administration of stimulating medicines, but considered that morphine was indicated. General rules for the direction of the incision could not be given, as they differed according to the position of the wound; the incision must make the wound accessible and must allow dilatation and draining of the pericardium. Wounds of the auricles required much space for suturing; displacement of the heart for this purpose was not always possible, and in that case the insertion of the sutures must be accomplished inside the thorax. When the pleura has been left open for a considerable time during the operation the pleural cavity must be drained, because the risk of pneumothorax was not so great as that of a possible infection of the pleura.

Dr. HESSE (St. Petersburg) gave details of 21 cases of operation for injuries of the heart, of which 19 were caused by stabs and 2 by gunshot wounds. Of these patients 6 recovered and 15 died, 11 from acute anæmia

and 4 from the wounds becoming infected. He said that in order to obtain successful results it was essential for such operations to be performed within four hours after the receipt of the injury, and that when this could be done 75 per cent. of the patients recovered. An abnormal cardiac sound was observed only once. In 38 per cent. of the cases the external wound was situated outside the region of the heart; in every instance the pleura was opened by the injury; the patients who sustained wounds of the auricles all died; those who recovered were all of them eventually able to work.

Condition of the Fundus Oculi in Rupture of the Liver.

Professor TIETZE (Breslau) said that in eight cases of rupture of the liver the fundus oculi showed well-marked alterations which very much resembled albuminuric retinitis. The explanation probably was that the great anæmia caused by the rupture of the liver had led to hæmorrhage within the optic nerve, as described by Professor Lichtheim in pernicious anæmia. There might also have been embolism following on the disintegration of cells in the liver.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Women's Effort on Behalf of St. Mary's Hospitals.

A DETERMINED effort is being made to help the funds of the St. Mary's Hospitals by means of a "Working Women's Campaign." At a meeting held recently to report on the success of the effort it was stated that not only had the working women themselves contributed according to their ability, but that large firms had shown sympathy and a readiness to respond. The new part of the United Hospitals, which is splendidly situated in Oxford-road opposite Whitworth Park, has been built, furnished, and equipped through the generosity of a local donor, but owing to lack of funds for its maintenance has been waiting 18 months to be opened. Some months ago Dr. Hopkinson offered several thousand pounds to the hospital provided certain conditions were complied with. The women's committee hopes to hand over £1000 as its contribution. The treasurer states that owing to the local support given in response to the recent appeal, and especially to the enthusiasm shown by the women of Manchester and Salford themselves, there is now no fear of such a huge annual deficit as faced the managers a few months ago. Even now, however, the income is far from adequate, but it has been resolved to open the hospital formally at an early date.

Bacup and the Shuttle-Kissing Committee.

The vigilance of the medical officer of health of Bacup recently brought into prominence the danger to weavers of what is called "shuttle-kissing." The Inter-Departmental Committee, consisting of Dr. H. T. Bulstrode of the Local Government Board, Mr. D. J. Shackleton of the Home Office, and Mr. Bellhouse, Chief Inspector of Factories, appointed by the Local Government Board to investigate the question, visited Bacup on May 5th. They were accompanied by Dr. Rigby, the factory surgeon, and Dr. J. Brown, the local medical officer of health. The committee visited the factories, took evidence, and examined the looms, and investigated the practice of shuttle-kissing. It is stated that an examination of the teeth of the workers showed that those organs were more defective than in similar workers in other towns.

Perils in Lead Pencils.

From the report of the medical officer of health of Bacup I gather that during April there have been cases of diphtheria and sore-throat in the schools of the borough, and some of the cases were fatal. It was suggested that there was a probable risk from the use of lead pencils and penholders in the day schools, as the children affected had attended the same infants' school where others suffered from sore-throat. The lead pencils were given out indiscriminately and were interchanged. A large percentage of the pencils had been bitten at the blunt end. Pencils collected from another school where there had been diphtheria were in a similar condition. On bacteriological investigations, both sets of pencils were found to contain large numbers of micro-organisms which might cause disease. Now all the lead pencils in use in the council schools of Bacup have been disinfected, with excellent results.

A Judge and Medical Evidence and Medical Referees.

A few days ago his honour Judge Bradbury, in his court at Wigan, in connexion with a case in which a collier claimed compensation from a colliery company, is stated to have expressed himself as sick of hearing in that court contradictory medical evidence. In the case before the judge evidence was given that the applicant was lifting a tub when he complained of having strained his side. He was examined by two or three medical men and received certificates for three weeks which entitled him to receive accident pay. Afterwards it was alleged that the applicant was suffering from varicocele, which could not be attributed to the accident. His honour gave judgment for the plaintiff and remarked that he sent as many of these cases as he could to the medical referee, and that that kind of case showed the usefulness of such officials. His honour would appreciate medical difficulties if he knew any medicine.

Medical Case of Interest to Shipowners.

A case of some interest to shipowners was decided in the Salford county court on May 5th. A claim against Glasgow shipowners was made by a ship's first officer for £1 a week as compensation during incapacity. It was stated that on May 31st of last year the claimant was supervising the storage of cargo on board one of the firm's steamers in the West Indies. As he was stooping over a hatch he sustained a sunstroke, whereby he became totally blind for three days, while at the present time there were partial blindness and a narrowed range of vision. The judge said he had to decide two questions, namely: whether there had been an accident within the meaning of the Workmen's Compensation Acts, and whether, if there had, that accident arose out of, and in the course of, the employment. The medical assessor who sat with the judge reported that the blindness was due to sunstroke and not to disease or any other cause, and that he attached importance to the exposure to the heat of the sun having been prolonged. The judge found that the applicant had been subjected to more than normal risk by the necessity of performing duties on the ship without any protection from an awning. He held that the accident arose out of, as well as in, the course of the employment, and awarded compensation at the rate of £1 a week as from the date of the accident, with costs on the B scale. The judge granted a stay of execution pending an appeal.

Tuberculous Milk-supply at Warrington.

The medical officer of health of Warrington, in his annual report, states that a systematic bacteriological examination of the milk supplied to the borough during the past year shows that one town farm and seven farms outside the borough were supplying tuberculous milk. It was estimated that 2000 pints of milk were distributed every day from these eight farms. It seems to be the custom that all the milk on a farm is mixed before it is sent into town. If this be so, then the whole of the milk sent from an infected farm will itself be infected, even if only one of the herd be suffering from tuberculosis. The council passed a resolution urging the Government to push forward the legislation promised on this subject.

Washing Accommodation for School Children.

The Manchester baths committee of the town council is continuing its much-to-be-commended policy of providing the inhabitants of the poorer districts of the city with every facility for personal cleanliness. Already in many poor neighbourhoods wash-baths, public washhouses, and laundries have been erected. On May 5th new premises were opened in Armitage-street and in Miles Platting. In the first-named premises wash-baths for 22 men and 20 women are provided, whilst the washhouse and laundry consists of 31 washing stalls and 32 drying horses, four steam-driven hydro extractors, and four steam-driven mangles. At Miles Platting, besides similar arrangements as to wash-baths, there are special provisions for school children. Scholars under 12 years of age will be permitted at certain times to use porcelain troughs which have been provided for their sole

use free of any charge—an arrangement which is certainly unique in this country.

Women and the Dental Profession.

Dentistry seems to be a field of activity well suited for young women looking for a career of independence and usefulness. Several women have successfully passed through the pharmaceutical department of the University of Manchester, which opens its portals to men and women on equal terms. The University some years ago decided to issue not only Diplomas in Dentistry, but also to offer the degree of Bachelor of Dental Surgery, which has already been taken by one candidate. One woman has entered for the full dental course at the University and the Dental Hospital.

Generous Donor of £5000 to the Blind Asylum.

Some time ago Mr. C. H. Scott presented to Henshaw's Blind Asylum a mansion situated close to the asylum at Old Trafford. This mansion the donor has since remodelled and enlarged so as to include a new wing and additional workshop accommodation at a cost of £2500. The whole scheme has cost £5000. This addition will enable the institution to admit 20 more deserving cases, making the total number of inmates 230, which, with 80 employed outside, will make this institution the largest of its kind in the United Kingdom.

May 15th.

NEWCASTLE-ON-TYNE.

(FROM OUR OWN CORRESPONDENT.)

Vaccination Decreasing at Tynemouth.

SPECIAL reference was made by Dr. James A. Hislop, medical officer of health of the borough of Tynemouth, in his annual report, just issued, to the growth of the non-vaccination movement in the district. No cases of small-pox were notified in the borough during the year, though six contacts were kept under observation. These were seamen or passengers returned from infected ports, or discharged from a vessel in which a case of the disease had occurred during the voyage. "The number of children who are unvaccinated is rapidly increasing," Dr. Hislop proceeds to say, "and the susceptibility of the community to the danger of a widespread and severe type of the disease is in proportion becoming greater each year." The last Vaccination Act came into force on Jan. 1st, 1907, relating to the possibility of any person acquiring exemption on the ground of conscientious objection to vaccination. The result is seen from the following figures which Mr. Percival, the clerk of the Tynemouth guardians, has extracted from the vaccination register for the union: Percentage of births not vaccinated: 1907, 12 per cent.; 1908, 23·9 per cent.; 1909, 36·2 per cent. These figures speak for themselves, showing the increasing number of exemptions granted each year.

Provision for Phthisis: Suggested Combination between the Sunderland and Shields Unions.

A committee of the Sunderland board of guardians has met a committee of the South Shields board at the offices of the latter on the subject of making provision for phthisical cases. Both bodies have for some time been considering the question, and the suggestion has been made that combined action would be better and less expensive than dealing separately with the matter. After an interesting discussion the conference was adjourned for the purpose of procuring further information and also of ascertaining how far the proposals in the National Insurance Bill might affect boards of guardians in making provision for these cases.

Royal Victoria Infirmary.

At a meeting of the selection committee held on May 4th the applications, seven in number, were considered for the appointment of honorary assistant to the throat and ear department in succession to Dr. S. S. Whillis (who has now become surgeon in charge of the department, vice Mr. Walter Ridley, deceased). The successful candidate was Mr. W. F. Wilson, M.B., B.S. Durh.

May 15th.

WALES AND WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENT.)

Cardiff Asylum.

AT a recent meeting of the committee of the Cardiff Asylum, or as it is officially designated the Mental Hospital, the medical superintendent, Dr. E. Goodall, stated that during the three years that the institution had been occupied by patients, out of 260 inmates who had been discharged only 8 per cent. had returned. During the year 1910 47 per cent. of the male patients admitted and 56 per cent. of the female patients had recovered, compared with 32 per cent. and 40 per cent. respectively in England and Wales.

Cardiff Port Sanitary Authority.

The medical officer of health of the Cardiff Port Sanitary Authority, Dr. Edward Walford, states in his annual report that during 1910 more than 12,000 vessels entered the port which for sanitary purposes includes Penarth. Dr. Walford is assisted in his duties connected with the port by an assistant medical officer of health and nine inspectors, who inspected during the year 2630 foreign and 8376 coastwise vessels. Defects were found in 17 per cent. of the former and in 6 per cent. of the latter. For some years past good use has been made of the Cardiff and County Public Health Laboratory for the bacteriological examination of drinking water taken from vessels entering the port. During 1910 there were examined 74 such samples, of which 40 were reported to be good, 3 fair, and 31 contaminated. Thirty-two vessels came to Cardiff during the year from infected ports. On 48 vessels rat-catchers were employed, the total number of rats caught and destroyed amounting to 8720. During the past three years on an average 5000 black rats taken from ships coming from infected ports have been destroyed annually, and from time to time rats have been examined bacteriologically at the Public Health Laboratory, but with negative results. Dr. Walford refers in his report to the desirability of destroying native brown rats in and about the dock buildings, wharves, &c. He suggests that a limitation of their number might be effected by the removal of all heaps of refuse and garbage near houses, by general cleanliness of dwellings and premises, and by means of traps, poisons, and bacterial virus.

The Notification of Whooping-cough.

There are so few districts in which whooping-cough is included among infectious diseases which are compulsorily notifiable that it is of interest to record the experience obtained from those few. Since April 1st, 1890, the disease has been compulsorily notifiable in the Llandaff and Dinas Powis rural district, which adjoins the borough of Cardiff and the urban district of Barry. During the first ten years of notification there was a yearly average of 116 cases notified, and during the second 10 years the yearly average was 163. During the earlier period the deaths averaged 6·6 annually, and during the later period 7·4 annually. The deaths from measles, which is not notifiable, during the same two ten-year periods averaged 2·2 annually in the former and 3·6 annually in the latter. It would appear, therefore, that the mere fact of notification has had no beneficial effect either upon the incidence of the disease or upon its fatality, and this is evidently the opinion of the medical officer of health, Dr. Richard Prichard, who states in his annual report that notification unless accompanied by isolation of the necessitous cases is of comparatively little value. He suggests that such cases might be removed to the isolation hospital. During 1910 there were notified 134 cases, of which three terminated fatally. Nearly 80 per cent. of the patients were under five years of age; 10 per cent. were under one year, 20 per cent. between one and two years, and nearly 20 per cent. between two and three years. The estimated population of the district at the middle of 1910 was 28,343.

Cardiff Infirmary.

Through the munificence of a private citizen the Cardiff Infirmary was provided a few years ago with an excellent operating theatre designed on absolutely aseptic principles. An equally useful addition has now been made to the institution by the erection of a separate gynæcological operating theatre. Considerable attention has been paid in the details of its construction to render it thoroughly aseptic. The walls are lined with marble, the ceiling is of Keen's cement, and

the floor is of terrazzo. The natural lighting is by means of a north top light and the artificial lighting by enclosed electric lights in the ceiling, while the operating table can be lighted by a long moveable electric bulb. The doors are made without sunk panels, and there is a complete absence elsewhere of ledges. The heating is by two sets of radiators, one heated by hot water, the other by steam. With the latter the temperature of the theatre can very rapidly be raised. An electric fan draws the air which enters the building behind the radiators through carbolised wool. At the opening of the theatre on May 6th by Lady Aberdare, Sir Francis Champneys referred to the great advantage of having special gynæcological wards, and expressed the hope that eventually a lying-in ward would be erected.

Working Men and a Dispenser's Pension.

The dispenser at the Royal Albert Hospital, Devonport, recently resigned his post after 40 years' service, and was awarded by the committee of the charity a pension of £52 per annum. His salary previously had been £185 a year. The working men's committee of the hospital appears to have objected to this allowance, especially as the institution has a deficit balance of about £1400. It was stated that the new dispenser will receive nearly £85 a year less than his predecessor, and a working man did not consider it right that the pension should be paid out of this salary. The members of the working men's committee requested the committee of management of the hospital to discuss this and other matters with them, but this was not acceded to, and in consequence of this act the working men's committee, after an existence of seven years, resolved to disband.

The late Dr. Thomas Nadauld Brushfield.

The Exeter city council has followed the recommendation of the subcommittee of the museum committee and purchased for £90 from Mr. Alderman Commin several books and a portfolio of portraits which were formerly in the library of the late Dr. T. N. Brushfield of Budleigh Salterton, and all of which relate to Sir Walter Raleigh. The council also passed a resolution thanking Mr. Commin for the generous manner in which he had allowed the valuable collection to be obtained. Mrs. Brushfield has presented to the museum in memory of her late husband a fine suit of Japanese armour, with long and short swords, and some glass and china.

Health of Exeter School Children.

The medical inspector of schools for Exeter (Mr. P. H. Stirk) in his annual report for 1910 states that matters are more satisfactory than in previous years. 14 per cent. of the children were found to be verminous, compared with 21 per cent. in 1908. In 1910 21 prosecutions were made in connexion with these cases, and in 20 convictions were obtained. Mr. Stirk adds that from 80 to 90 per cent. of the children (about 6000) required dental treatment, and in some districts tooth-brushes were supplied and "tooth-brush drill" introduced.

Salary of a Medical Officer of Health.

The Local Government Board recently drew the attention of the Teignmouth (Devon) urban district council to the fact that although the duties of the medical officer of health had increased the remuneration had not been added to. At the last meeting of the council it was decided, upon the recommendation of the sanitary committee, to increase the salary from £80 to £100 per annum. Dr. F. C. H. Piggott has held the appointment of medical officer of health of Teignmouth for about 24 years and his work has greatly increased during that period of time.

The Local Government Board and the Penzance Board of Guardians.

The Local Government Board recently informed the Penzance board of guardians that they were not prepared to sanction the appointment of Mr. J. H. Wilson as medical officer for the fifth district. The guardians, after some discussion, decided to ask the Local Government Board to sanction the appointment for three months. The action of the Local Government Board is in all probability due to the fact that a medical man of the name of Wilson had, a short time ago, appeared before the Truro bench of magistrates, and it is believed that this is the same person who was appointed district medical officer. If such is the case the Penzance board of guardians could have read full reports of the proceedings in the local press.

May 16th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Health Report for the County of Aberdeen.

A MEETING of the Public Health Committee of the Aberdeen county council was held on May 12th, when Dr. J. P. Watt, medical officer of health for the county, gave in his report. There has been a fall in the population since the last Census of 4113. The birth-rate was 24·287 per 1000; the death-rate was 12·602. Dr. Watt submits in the report a chart showing the birth- and death-rate from 1891 to 1910. For the first five years the average birth-rate was 28·1 per 1000, for the next five years 27·9, for the next five years 26·4, and for 1906–10, 25·0. The death-rates for the four periods of five years were: 13·6, 13·1, 12·8, 12·7. The difference between the average rate of the first and fourth periods represents, as regards births, 310 per 100,000, and as regards deaths 90 per 100,000. An analysis of the deaths at the different age-periods shows that the first four—viz., under 1 year, 1 to 5 years, 5 to 15 years, and 15 to 25 years—have shared about equally in the fall. The deaths from 25 to 60 years have remained stationary, while the percentage of deaths over 60 has steadily increased. The average age for death was, for males 31·88 years, and for females 31·85. The death-rate from phthisis was the lowest yet recorded in the county. The death-rate of the 2916 children born, under one year was 86·882 per 1000. The death-rate from other than pulmonary tuberculosis was 10·676 per 10,000. Pneumonia caused 104 deaths, influenza 27, respiratory diseases 119, diseases of the circulatory system 291, and malignant diseases 125. By June 1st, 1910, compulsory notification of pulmonary phthisis had been adopted in seven out of the eight districts, and in accordance with the recommendations of the conference held in March, 1909, arrangements had been made in all the districts with the registrars for the immediate intimation of deaths from phthisis. This has proved a most useful measure. During the year 94 cases were notified under the Act; of these, 42 had died by Dec. 31st. The cases were followed up in coöperation with the patients' medical attendants. Instructions were given by leaflet and otherwise as to the prevention of infection, and what other steps were practicable were taken. In some cases patients were provided by means of shelters with facilities for open-air treatment at their own homes. The adoption of the report was moved and seconded.

Medical Officer of Fifeshire.

A meeting of the county council of Fife was held on May 9th, when Dr. John Ronald Currie, medical officer of health of the city of Chester, was unanimously appointed medical officer of health for the county and chief medical school officer, in succession to Dr. Hugh A. Macewen, who is going to the Local Government Board in England. Dr. Currie graduated as M.A. in Edinburgh in 1891, where he held an open bursary. At the University of Oxford he held an open scholarship at Lincoln College, obtained a first-class in classical honours moderations, and was awarded an exhibition for the study of natural science. He graduated as Bachelor of Arts in 1896, and Master of Arts in 1910. After a brilliant career at the University of Glasgow he graduated as Bachelor of Medicine and Bachelor of Surgery with commendation in 1898, and in 1910 took the degree of M.D. with high commendation.

Small-pox in Lochee, Dundee.

On May 12th a woman residing in Lochee, who had been ill for some days, was removed to the small-pox hospital at King's Cross, while her children and various contacts were revaccinated, and some of them removed to the reception house. The locality in which the case occurred is a densely populated one. There is so far no trace of how the infection was introduced.

Typhus Fever in the Hebrides: Tribute to Brave Priest and Officials.

The report of Dr. J. Macdonald, medical officer of health for Inverness-shire, which has just been published, tells of an outbreak of typhus fever in the small island of Eriskay, one of the outposts of Inverness-shire in the Atlantic Ocean, and of the devotion of Father MacNeill, Dr. Burns, local medical officer of health, the local sanitary

inspector, and the nurse in charge, who by their energetic and fearless tackling of the outbreak managed to keep the disease within bounds, despite the absence of hospital accommodation and the want of proper means of isolation in the infected houses. Dr. Macdonald says: "The outbreak appeared in one of the houses which was of such a type that disinfection in the ordinary sense of the term was impossible." The house, the report says, is typical of the western isles, being 26 ft. long by 10 ft. wide, and is divided into two compartments by what may be called by courtesy a partition. The roof is of very old sods and thatch, sadly in need of renewal and supported by blackened and ancient rafters. There is no chimney or flue. The fire is made on the floor, and its smoke goes, on the hit-or-miss principle, through a hole in the roof or the doorway. The walls are built of rough undressed stones, rudely piled upon each other, without lime or clay or any substance for mortar. There is no lining on the inner sides; the floor is of earth, with points of rock cropping up here or there. The interior is dark and badly ventilated, and the part for sleeping in is about 11 ft. by 10 ft.; in it there are three beds. In this compartment there is one small window which does not open. The only way to disinfect the house was to blow it to the ground—an extreme step that was not authorised by the Public Health Act. The exaggerated dread of fever which prevails among the islanders has its advantages, as the infected houses were completely shunned by the inhabitants of the island. On the other hand, it has its disadvantages, as Father MacNeill, Dr. Burns, and the nurse, with a little assistance from the reporter, had to put one patient who died from the fever into the coffin and bring the body outside the house before the friends and neighbours would come near. Father MacNeill was unremitting in his attention to the cases, and rendered most valuable assistance to the sanitary officials, an assistance which the officials desire most gratefully to acknowledge.

May 15th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Insurance Bill.

THE publication of the text of the Insurance Bill has caused some uneasiness as to its effects in Ireland. The main modification of the Bill in its application to Ireland is that the work of attendance on deposit contributors is thrown compulsorily on the dispensary medical officers. This may mean practically that almost the entire practice of the country may be thrown into their hands, at something approaching club rates of pay. The number of income-tax payers in Ireland is proportionately small, and consequently the number of those to be compulsorily insured is very large. Moreover, it is on this class, the farmers and tradespeople with incomes from £100 to £160 a year, that the country practitioner depends at present mainly for his private practice. His remuneration for attending them as insured persons will be much less than he used to draw in private fees. Moreover, there is nothing to prevent persons of higher income coming under the scheme and also obtaining medical attendance at small rates. It is to be remembered that at present the fees for private practice are in Ireland on a more satisfactory scale than in England for people of the same means. It looks as if the result of the Bill will be that the dispensary medical officer will have more work for less pay, whereas the independent practitioner is likely to be squeezed out. These considerations, of course, apply chiefly to the country districts and the small towns rather than to the few large cities.

Imperial Taxation and the Rates.

In the House of Commons last week Mr. Birrell corrected a misstatement in the recent circular of the Local Government Board concerning the grants to local taxes for medical and educational expenses, to which reference was made in THE LANCET of May 13th (p. 1313). Mr. Birrell stated that there was no intention, as had been threatened by the circular, to cut down the grant by half. He further said that the change in procedure would not mean any increase to the rates. If the circular meant anything, however, it meant that the grant would be calculated on the figures of a standard year (1902), and not on the actual expenditure year by year. Mr. Birrell's answer by no means leaves the matter clear. Expenditure on medical and educational purposes has increased largely since 1902.

City Bacteriologist for Dublin.

For many months there has been a deadlock with regard to the appointment of a bacteriologist for the city of Dublin. A gentleman was elected last year to the position by the corporation of Dublin, but the Local Government Board declined to sanction the appointment on the ground that, being a dispensary medical officer, he had not the necessary time to give to the duties. Nothing further was done until the Local Government Board wrote to the corporation last week requesting it to proceed to another appointment. In reply the corporation suggests that the Local Government Board had no power to set aside an appointment on any other grounds than those of qualification, and further, that the Board has no power to direct the corporation to proceed to an election.

The Funds of the late Royal University.

The joint committee of the University Commissions of the National and of the Queen's Universities of Belfast have decided that the accumulated savings of the late Royal University of Ireland—£60,000—shall be divided as follows: Two-fifths, or £24,000, are to go to Belfast, and three-fifths, or £36,000, are to be given to the National University of Ireland.

Tuberculosis Mortality in Ireland.

An extremely interesting and suggestive diagram has just been issued by the Women's National Health Association, reproduced in part from the report of the Registrar-General for Ireland by permission of the Controller of His Majesty's Stationery Office, showing the death-rate in Ireland during 11 years, 1900–1910. From the figures the following deductions may be made: (1) that the death-rate from tuberculosis—viz., 2·3 per 1000—is the lowest recorded in Ireland since 1864, the year in which registration of deaths was introduced; (2) that there has been a decrease of one-seventh of the total number of deaths from tuberculosis in three years; (3) that there were 32 fewer deaths each week from tuberculosis in 1910 than in 1907; or (4) that in every two days in 1910 there were about nine fewer deaths when compared with 1907; (5) as it is generally recognised that there are about seven or eight patients suffering from tuberculosis for each death, the decrease in mortality shows that there were about 12,000 fewer people suffering from tuberculosis in Ireland in 1910 than there were in 1907. It was in 1907 that the Women's National Health Association of Ireland was founded, and in that year, as well as in the preceding two years (1905–1906), the tuberculosis mortality was 2·7 per 1000. It has fallen steadily from 1907, until now it is 2·3 per 1000, and the result is due to the great awakening of the people of Ireland brought about by this health association.

Castlebar District Asylum.

A recent report of the resident medical superintendent, Dr. F. C. Ellison, discloses a grave condition in the Castlebar District Asylum. The institution is overcrowded, and infective diseases are rife. Both patients and staff suffer to an abnormal extent from tuberculosis, and there are numerous cases of erysipelas, influenza, and septic throat. To make matters worse, the water-supply has failed, and a large part of the asylum has been for some time deprived of any systematic water-supply. It is only by continuous pumping that the rest of the building gets even an insufficient supply.

Death of Dr. Hercules H. MacDonnell of Dundalk.

By the death of Dr. Hercules H. MacDonnell of Dundalk Ireland has lost one of its best-known country practitioners. The county infirmary service has always kept up a high standard of professional skill in the county towns of Ireland, and Dr. MacDonnell, who had been surgeon to the Louth County Infirmary for 34 years, was a typical example of that service. He was President of the Irish Medical Association in 1894.

May 15th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Height of French Women.

THE mean height of the French woman has hitherto been fixed at 1·54 m. (60·43 in.), according to all the measurements hitherto made by various authors. Dr. A. Marie, physician to the Villejuif Hospital, and Dr. MacAuliffe came to the conclusion that these figures had been arrived at from measurements made on cadavers, and particularly on bodies in the dissecting-rooms—that is to say, the bodies of those who were left unclaimed by their friends after death. This consideration reduced all the observations to a particular social stratum which contained a large number of abnormal subjects stunted by misery and sickness, healthy and well set-up subjects which would raise the mean being hardly ever met with in these circumstances. These two observers, therefore, reviewed these measurements in 255 French women belonging to the most diverse classes: 50 agricultural workers, 50 Parisian working women, 50 patients from an asylum, 50 middle class and society women, and 55 women living alone but without occupation. The mean at which they arrived is 1·57 m. (61·60 in.), a figure higher by 3 cm. (1·17 in.) than that of preceding estimates. This conclusion is of some importance. Besides enabling us to rectify an error that existed, in attributing to the women of the present generation a greater height than to those of the past, it will simplify anthropological or police measurements, which endeavour to deduce the total height from the knowledge of that of a portion of a limb.

The "Skins" of Sausages.

The Syndicate of Alimentation has asked the Minister of Agriculture, who is charged with the suppression of adulteration in food substances, whether he would authorise the substitution for the actual intestinal membrane as a covering for sausages, &c., of one of fine-meshed gauze saturated with gelatine rendered insoluble by alum. The Minister replied that he saw no objection to such substitution, which was in no way contrary to the principles of hygiene. It would seem, indeed, that such artificial coverings of gelatine should present fewer chances of infection than those made of animal intestine, which is much more difficult of sterilisation, in spite of the washings with potassium permanganate or sodium bisulphite that it undergoes—an operation complicated enough to offer the risk of its being imperfectly accomplished in a large industrial process. It must be admitted that these coverings are usually sufficiently sterilised in the process of cooking, and, moreover, that they are not usually eaten. Nevertheless, it seems certain that inadequately disinfected intestine offers the risk of infecting by contact the meat in the sausage prior to cooking. The newspapers, in reporting this decision, insist that the trade should not make use for the support of the sausage envelopes of gauze derived from old hospital dressings!

The Evening Closing of Druggists' Shops.

The union (*syndicaliste*) movement, which is extending throughout France, breaks out at numerous points of social life, and it is now beginning to show itself in the field of public health. The druggists' assistants, who have formed a union, have organised a vast movement in favour of closing the pharmacies at 9 o'clock. Numerous meetings have taken place and there have been disturbances in front of those druggists' shops which persist in remaining open after that hour. Some pharmacies in the centre of Paris which remained open all night have had their windows smashed with stones and their contents destroyed by the malcontents. At the present time a very small number of pharmacies dare to remain open under guard by the police after the hour named. But already the public is beginning to complain of this situation, which causes the gravest inconvenience. In consequence of the development of taxicabs and motor omnibuses street accidents become more and more frequent, and the Druggists' Assistants Union has not been able to prevent such accidents from taking place later than 9 P.M. An agreement with the chauffeurs' union would have proved on this point the value of such trade unions. Wherefore it happens pretty frequently that people injured in the street in the course of the evening can no longer receive, as heretofore, almost immediate first aid at the nearest pharmacy before being taken home to await their medical attendant's arrival, but have to be taken to the hospitals, which, for certain quarters, are very much out of the way. The injured person, having with him during this long journey only the inexperienced assistance of a policeman, runs the risk of having his condition greatly aggravated. On the other hand, the medical men, as well as the pharmacists, complain that this plan of taking all injured persons to the hospital when they may not be indigent, inflicts on them a grave professional loss. Up to the present the steps taken to come to an agreement with the Druggists' Assistants' Union to have certain druggists' shops open in the evening and at night in each quarter, according to a roster deposited at the police stations, have come to nothing, and the public continues to complain with good reason. It is to be hoped that this awkward situation will have the good effect of hastening the absolutely necessary establishment of first-aid stations in all quarters of Paris.

The New Hôtel Dieu of Lyons.

The city of Lyons is about to build a model hospital to replace its very ancient but exceedingly incommodious ones. The plans have been drawn by a talented architect, M. Tony Garnier, who has studied closely the most recent and highly advanced hospitals of Europe and America. Moreover, M. Herriot, the mayor of Lyons, presented in person to the Academy of Medicine these plans, which have met with lively approval, and will now be submitted to a minute scrutiny at the hands of a special commission. It may be said, therefore, that the new Hôtel Dieu of Lyons will be a type of the most complete and rational character in hospital construction to be found in France. It will cover a surface of 16 hectares (approximately 40 acres), and will on this account be situated on the outskirts of the large city. It will contain 1300 beds, and all the clinics of the Faculty of Medicine will be transferred there. The principle of the separation of services will be strictly carried out. The pavilions will be completely isolated from one another, and in each pavilion infected patients will occupy different quarters from mere suspects or non-infected cases, not to mention numerous isolation wards assigned to excited or demented patients. Further, numerous annexes will be provided, properly installed and equipped for radiography, electrotherapy, mechanotherapy, and physical therapeutic methods. A central laboratory containing everything necessary for an institute of pathological anatomy will be erected adjacent to the post-mortem rooms. Lecture rooms, with small laboratories attached, and provided with methods of demonstration by the aid of lanterns, cinematography, &c., will be established for the use of the Faculty. Galleries for aerotherapy, covered promenades, refectories will be organised with all the comfort possible, and all open spaces will be grassed and planted. Inasmuch as this model hospital is to be situated outside of the city it is very likely that the city will have to establish receiving and first-aid stations at various points within it to deal with those emergencies now attended to by the ancient hospitals.

May 15th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The International Exhibition of Hygiene at Dresden.

BEING in Dresden on May 10th I had an opportunity of making a short visit to the newly opened International Exhibition of Hygiene. The buildings have a fine position in the beautiful Grosser Garten, the Hyde Park of Dresden; their external aspect is admirable from an artistic point of view, and the internal arrangements are of a kind to satisfy professional experts as well as to interest the general public. Few, if any, exhibitions on an equally extensive scale are really complete on the opening day, but this one is now ready in most of its departments, the chief exceptions being that the British, Spanish, and Brazilian pavilions are still unfinished, and that those of France, China, and Japan were not fully open at the time of my visit. For the general public the great attraction is the People's Hall, immediately facing the principal entrance. Here are displayed a profusion of objects illustrating facts or conveying information

within the comprehension of ordinary visitors, a few of the subjects selected for this purpose being the elementary parts of human anatomy and physiology, food, clothing, the hygiene of dwellings, nursing, general hygiene, physical culture, and so on. In the section devoted to clothing the ill-effects which follow disregard of hygienic principles are illustrated by diagrams showing how tight-lacing causes displacement of the liver, and by preparations of the bones of the feet exemplifying the distortions produced by the pressure of unsuitable foot-coverings. The disastrous effects of over-indulgence in alcoholic liquors are represented in anatomical plates and statistical tables. There are also a historical department containing apparatus and appliances used in bygone days and an ethnological department with illustrations of the hygienic notions current among certain Asiatic and African nations. In the special scientific department there are sections devoted to the prophylaxis and treatment of several diseases, including infectious fevers, cancer, tuberculosis, diseases of the teeth, venereal diseases, &c.; there are also large halls containing exhibits relative to the hygiene of dwellings and to the hygiene of various games and athletic sports. Of the foreign pavilions already open to the public those of Austria and of Switzerland possess the most interest, containing as they do a complete representation of the hygienic appliances and methods employed in the respective countries. Many congresses of medical interest will be held in connexion with the exhibition. English medical men will find the exhibition well worth a visit, more especially as Dresden presents many prominent attractions and has for a long time been a favourite resort of English tourists.

The Robert Koch Memorial Endowment.

The annual meeting of the committee of the Robert Koch Memorial Endowment for the encouragement of research on the subject of tuberculosis was held not long ago, and it was then stated that the funds in hand now amounted to 1,200,000 marks (£60,000). The income of the capital was being employed for investigations as to the existence of the bovine type of the tubercle bacillus in the human species. These researches were begun by Professor Koch himself and have been continued by his successor, Professor Gaffky. Similar researches are also being made by Frau Dr. Rabinowitsch and Professor Kossel, with assistance from the funds of the endowment. The committee has decided to give grants to Professor Schieck and Dr. Krusius for investigations on tuberculosis of the eyes, to Dr. Weinberg for statistical inquiries relative to tuberculosis, and to Professor Gaffky for the continuation of his researches. Since the year 1908 the sum of 72,000 marks (£3600) has been spent in scientific work.

May 15th.

UNITED STATES OF AMERICA.

(FROM OUR OWN CORRESPONDENTS.)

Serum Treatment for Cerebro-spinal Meningitis.

IT is stated that the Health Department of New York city will soon recommend to medical men the need for bacteriological examination, not only in well-authenticated cases, but also in suspected cases, of cerebro-spinal meningitis. Cases of epidemic cerebro-spinal meningitis will thus have the benefit of early serum treatment. At present such cases are treated by the Health Department only in conjunction with the attending medical men. Treatment of the malady by serum prepared at the Rockefeller Institute has been followed by very satisfactory results.

Flogging Recommended for Vicious Boys.

In his opening address to the Connecticut Conference of Charities and Corrections on April 14th Governor Baldwin advocated a return to whipping with a birch-rod or leather-strap as a corrective measure for bad boys and for grown-up men whose offences involve great personal violence or indignity to another. The Governor also deprecated the coddling of prisoners so frequently in vogue in America. He went so far as to say that "the dietary is made up as well to tempt as to satisfy the appetite, and very often so as to overload the stomach and foment disease."

The Patent and Proprietary Medicine Question in the United States.

The United States still remains the country in which the patent and proprietary medicine business is most flourishing. The National Pure Food and Drug Law has done much to check the patent medicine evil, but it seems impossible for many reasons wholly to root it up. Ex-President Roosevelt, who generally furnishes a weekly article to the *Outlook*, took as his text for April 15th the ethics of journalism. In this article he paid his respects in no uncertain manner to the proprietors of those papers which allow in their advertising pages advertisements of a harmful nature. He criticised with especial severity those who permitted the insertion of patent medicine advertisements, and stigmatised these advertisements as a very great evil. He was of the opinion, however, that with regard to this matter there had been a great advance in public sentiment. The National Pure Food and Drug Law represented a long step in the right direction. Colonel Roosevelt thought—and, surely, the wish must have been the father to the thought—that the high-class magazines of America have thrown out this kind of advertising, but the great majority of American newspapers still print it without limitation, and probably gain as much money from it as from the financial advertisements. The bad influence exercised by the backers of objectionable medical and financial advertisements when they spend between 30 and 40 million dollars a year in the daily newspaper press is obvious. He drew attention to the fact that it is the poorest and most ignorant, and consequently the most helpless, class who are attracted and injured by such advertisements. Nevertheless, he said, it was necessary to discriminate between papers that fought this evil and those that encouraged it. *Collier's Magazine* some five years ago conducted a campaign against the patent medicine business in America which hurt it considerably, and which was the means of reducing the amount spent on advertising. According to Colonel Roosevelt the patent medicine proprietors have begun recently to get back their courage and to increase the advertising of their products. The chief reason for the continued large sale of patent medicines and for the flourishing business done by quacks in the United States is that the newspapers, as a rule, accept advertisements which, by specious misrepresentation and lying, lure the gullible and ignorant. The Bureau of Chemistry of the United States Department of Agriculture is mainly responsible for the carrying out of the provisions of the Pure Food and Drug Law and has effected much by the publication of pamphlets setting forth the true composition and harmfulness of many of the most popular patent medicines. But so long as the majority of the most influential papers of the country insert the advertisements of patent medicine proprietors and of quacks of every description, just so long will the illegitimate traffic continue. Recently in New York raids have been made upon some of what are known as mail order "medical" concerns. The particular so-called institutes raided by the police were those which advertise wonderful cures in newspapers printed in foreign languages. All these concerns were said to be making money fast. One was stated to be making £15,000 a year and another from £10 to £50 a day. These firms one and all advertised largely in the daily press. It is stated that the postal authorities of the United States intend to prosecute and punish, if possible, the advertisers and then intend to proceed against the newspapers which print the advertisements. If this course is pursued the outcome should be interesting.

War on Quack Remedies in the United States.

The first big legal contest arising out of the passage of the National Pure Food and Drug Act in the United States was commenced on April 13th in the Supreme Court. The disputed point occurred in the United States District Court of Western Missouri, where an indictment was quashed on the ground that the Act did not apply to false statements regarding the ingredients. A practitioner was charged with having sold drugs which he stated would cure cancer, but which the United States Government said were quite worthless for that purpose. The counsel of the party charged contended that if the law is to be interpreted as forbidding a statement with regard to the curative properties of drugs the Act is unconstitutional. In this event medical men everywhere would risk criminal prosecution in giving any written

opinion as to what a prescription was intended to accomplish. Solicitor-General Lehmann, in a brief just filed, says a study of the Act shows that Congress had in mind striking at false statements regarding the curative properties of drugs. He defends the law as constitutional when interpreted to forbid such statements. Further, he denies that the law so interpreted would apply to any medical man in the practice of his profession, nor does the Act deal with cures by faith or prayer or "Christian Science."

"Headache Cures."

Dr. H. W. Wiley, chief chemist of the United States Department of Agriculture, has announced his intention of having a thorough investigation made under the Pure Food and Drug Act into the composition of the so-called headache cures, which are so largely sold in the United States. According to Dr. Wiley, headache powders contain considerable quantities of acetanilid, phenacetin, antipyrin, or caffeine, all of which more or less affect the heart injuriously. Dr. Wiley says that these powders contain a larger proportion of the above drugs than any medical man would think of prescribing.

Death of Dr. Hermann Knapp.

Dr. Hermann Knapp, professor emeritus of ophthalmology in the College of Physicians and Surgeons, New York, founder of the New York Ophthalmic and Aural Institute, and a well-known eye and ear specialist, died from pneumonia on May 1st. Dr. Knapp, who was at the time of his death 80 years of age, was born at Dauborn, Prussia, and took his degree in medicine at the University of Giessen in 1854. From 1864 to 1868 he was professor of ophthalmology in the University of Heidelberg, and while at Heidelberg founded a hospital and dispensary for eye diseases, which was afterwards incorporated into the University. In 1868 Dr. Knapp came to New York and practised ophthalmology up to the time of his retirement a few years ago. In 1869 he founded the Archives of Ophthalmology, published both in English and German. In 1882 he was appointed professor of ophthalmology in the New York University Medical College, and in 1888 filled the same chair in the College of Physicians and Surgeons. He was a member of most of the leading medical societies and the author of many papers dealing with his specialty. He wrote a treatise on Intra-ocular Tumours.

May 9th.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Plague in the United Provinces.

AT a recent meeting of the United Provinces Legislative Council the Hon. Sayid Al-i-Nabi asked: In view of the fact that the plague in the province of Agra is on the increase what steps has the Government taken, or proposes to take, for its prevention? The Hon. Mr. Stuart had prepared the answer to this question and it was read by the Hon. Mr. Wright. Mr. Stuart stated: Plague in an epidemic form has prevailed in the United Provinces since 1902. The mortality has been as follows:—

Calendar year	1902	40,223	deaths.
" "	1903	84,499	"
" "	1904	179,082	"
Year ending June 30th,	1905	434,225	"
" " "	1906	60,767	"
" " "	1907	341,725	"
" " "	1908	26,622	"
" " "	1909	14,252	"
" " "	1910	156,301	"
From July 1st, 1910, to March 4th,	1911	118,416	"

During the ten years under review every effort has been made to organise measures for the prevention or alleviation of the disease. A full trial has been given to every proposal which has had anything to support it, and the measures which have yielded a satisfactory result have been retained and are now in use. The Lieutenant-Governor has the deepest sympathy with the people in the province in the terrible affliction which has fallen on them and has sought by every means in his power to alleviate it. From the year 1907 onwards his policy with regard to plague measures has been set forth annually in Government resolutions. The expenditure on measures for the relief of plague since 1907 has amounted to Rs.9,78,296. Mr. Stuart went on to specify the chief measures adopted, including the disinfection of dwelling-houses, rat destruction, evacuation of dwelling-houses, and inoculation. With reference to the evacuation of dwelling-houses he said: "In the opinion of the Lieutenant-Governor the State would not be justified in accepting the responsibility for the erection of temporary dwellings save under exceptional circumstances. The cost of erecting temporary dwellings for the inhabitants of every infected village would be prohibitive. In special circumstances where materials cannot be obtained at a cost within the means of the people his honour has sanctioned, and is ready to sanction, such grants. In towns and cities municipal boards are, of course, free to make any grants for this purpose that they may deem necessary." Speaking of inoculation Mr. Stuart said: "It has been a source of great disappointment to the Lieutenant-Governor to observe that the general attitude of the people towards inoculation has shown so little improvement, and that, as was stated in Paragraph 5 of the resolution of Sept. 22nd, 1910, it can only be described as one varying from a more or less grudging acquiescence to apathy, passive resistance, and even active hostility. In many districts rumours and superstitions of the most grotesque character have been rife, and until this feeling has been overcome it is impossible to push inoculation to an extent which is likely to have a marked effect upon the present mortality from plague. All that can be done, and is being done, is to give every facility for inoculation wherever the people show any tendency to avail themselves thereof. At the present time facilities for inoculation are provided in every district, and a special staff, consisting of one officer of the Indian Medical Service and 21 inoculators, is at work in 15 districts in which plague is or threatens to become widespread, and of which the inhabitants have displayed some willingness to submit to inoculation. During the year ending June 30th, 1910, 76,170 inoculations were performed. From July 1st, 1910, to Jan. 31st, 1911, the number of inoculations has been 33,933. A commission of highly qualified medical officers is at present conducting researches within this province into the causes of plague and the remedies against it, and Sir John Hewett is not without hope that their labours will lead to some practical results."

The Career of Sub-Assistant Surgeons in India.

Major G. Jackson, I.M.S., in a presidential address before the All-India Sub-Assistant Surgeons Conference, made the following remarks relative to the prospects of hospital assistants in India:—"During all my official career I have worked with sub-assistant surgeons, not only in civil and military employment in time of peace, but on active service on the frontier and elsewhere. I have thus had ample opportunity of observing your worth and knowing what excellent public servants you are. I need hardly say from the report read now it is evident the association is in a flourishing condition. To increase your professional knowledge and to improve your social and moral position are the aims of our association and they deserve support. They have my entire sympathy and support, and I feel, I may add, of the whole of the Indian Medical Service officers. You should try to improve your professional knowledge. Government provides their hospitals and dispensaries in each with good professional text-books. You should make diligent use of them. In many cases you come in contact with people who have never before received Western medical treatment. In such a community, with tact, sympathy, and reasonable skill, you are in a position to gain the confidence of the people, and when such confidence is not forthcoming, believe me, the cause of failure will be found in yourself. You cannot hope to become great surgeons, for many of you have no opportunity of making scientific medical discoveries, but for the successful treatment of ordinary ills that affect humanity you have special opportunities, and there is no reason why you should not become expert general practitioners. As regards improving your status, which you desire justifiably, a good deal has been done lately, and I feel certain further representation on that subject will be sympathetically considered by Government when made in the proper spirit."

April 29th.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At a meeting of the Comitia of the Royal College of Physicians on April 27th and of the Council of the Royal College of Surgeons on May 11th, diplomas of L.R.C.P. and M.R.C.S. were respectively conferred by the Colleges upon the undermentioned candidates, who have passed the requisite examinations and complied with the by-laws:—

Harold George Alexander, Middlesex Hospital; Charles Vernon Anderson, St. Thomas's Hospital; Frederick Jasper Anderson, St. Bartholomew's Hospital; Henry Park Ashe, King's College Hospital; Cyril Carlyle Beatty, Durham University and London Hospital; Edward Charles Beddows, Birmingham University; Isaac Barnet Bernstein, Leeds University; Jamasp Cursetji Bharucha, L.M.S. Bombay, Bombay University and London Hospital; James Leatham Birley, B.A. Oxon., Oxford University and St. Thomas's Hospital; Arthur Malcolm Bodkin, B.A. Cantab., Cambridge University and Guy's Hospital; Gordon Normanby Brandon, St. Thomas's Hospital; William Broughton-Alcock, Sydney, Edinburgh, and Cambridge Universities and St. Bartholomew's Hospital; Cuthbert John Butler, Charing Cross Hospital; Norman Stuart Carruthers, Guy's Hospital; Arthur Hamilton Crawford, B.A., M.D. Toronto, Toronto University and Middlesex Hospital; Kenneth James Acton Davis, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; James Anthony Delmege, Guy's Hospital; Hubert Templer Depree, B.A. Cantab., Cambridge University and Guy's Hospital; Hinton de Silva, L.M.S. Ceylon, Ceylon Medical College and Middlesex Hospital; George James Frank Elphick, St. Mary's Hospital; John Chute Ellis, Otago University and London Hospital; Hugh Arthur Evans, Westminster Hospital; Hubert John Burgess Fry, B.A., B.Sc. Oxon., Oxford University and St. Thomas's Hospital; Jacob Gavronsky, M.D. Halle, Berlin, Heidelberg, and Halle Universities; Eric Lush Pearce Gould, B.A. Oxon., Oxford University and Middlesex Hospital; Willoughby Gordon Grant, London Hospital; Haji Sulaiman Gulamhussein Haji, L.M.S. Bombay, Bombay University and London Hospital; Edward Wilson Hall, Middlesex Hospital; Beverley Hannah, M.B. Toronto, Toronto University and University College Hospital; Cuthbert Izon Harmar, Birmingham University; Charles Herbert Hart, Bristol University; Arthur William Havard, University College, Cardiff, and London Hospital; Reginald Gordon Hill, St. Bartholomew's Hospital; James Frank Hoare, University College Hospital; Ivor Robert Hudleston, Bristol University and St. Bartholomew's Hospital; Geoffrey Roland Hughes, Oxford University and London Hospital; Leonard Cockburn Dundas Irvine, B.A. Cantab., Cambridge University and Guy's Hospital; Alfred Herbert James, University College Hospital; Harold Llewellyn James, Guy's Hospital; Nawin Chand Kapur, Punjab University and University College Hospital; William Ewart Latham, Liverpool University; Wilfred Edgar Levinson, Guy's Hospital; James Charles Robert Lind, University College and Middlesex Hospitals; Mark Lindsey, St. Bartholomew's Hospital; Norman Francis Lock, B.A. Cantab., Cambridge University and St. Thomas's Hospital; Arthur James McNair, B.A. Cantab., Cambridge University and Guy's Hospital; Walter Gibson Marsden, B.A. Cantab., Cambridge University and St. Thomas's Hospital; William Gordon Masefield, Middlesex Hospital; Malcolm Milton Melrose, Manchester University; Harold Arundel Moody, King's College Hospital; Charles George Hugh Morse, Cambridge University and St. Bartholomew's Hospital; John Grimson Moseley, Middlesex Hospital; Jorabhai Bhaibabhai Patel, Middlesex Hospital; Harold Fey Percival, B.A. Cantab., Cambridge University and Guy's Hospital; Harry Platts, Guy's Hospital; John Pryce-Davies, Guy's Hospital; Ibrahim Adbel Razzak, London Hospital; Thomas Stanley Rippon, Bristol University and London Hospital; Stanley Ritson, B.Sc. Lond., King's College Hospital; William Dallas Ross, B.A. Cantab., Cambridge University and St. Thomas's Hospital; Richard Alun Rowlands, B.Sc. Wales, London Hospital; Frederic Sanders, London Hospital; Henry Edwin Scargill, Leeds University; Thomas Stoney Sharpley, Guy's Hospital; Robert Henry Sheard, M.B. Toronto, Toronto University and London Hospital; Wilburn Smith, Jefferson Medical College and University College Hospital; Ernest Nedwons Snowden, St. Bartholomew's Hospital; Henry Lionel Hughes Steele, St. Thomas's Hospital; Charles Horace Steinbach, Guy's Hospital; John Frank Taylor, B.A. Cantab., Cambridge University and St. Thomas's Hospital; Frank Stanley Tinker, B.A. Cantab., Cambridge and Liverpool Universities; John William Trevan, B.Sc. Lond., St. Bartholomew's Hospital; Daniel Owen Twining, University College Hospital; Richard Trevor Vivian, St. Bartholomew's Hospital; Michel Ernest Theodore Demetrius Vlasto, M.B., B.S. Lond., University College Hospital; *James Owen David Wade, University College, Cardiff, and Charing Cross Hospital; William Warwick Wagstaffe, B.A. Oxon., Oxford University and St. Thomas's Hospital; Charles Barron Wainwright, B.A. Cantab., Cambridge University and St. Thomas's Hospital; Harry Bertram Walker, London Hospital; Harold Percy Warner, Guy's Hospital; Archibald Farrell Waterhouse, Sheffield University; Edward Parker Wallman Wedd, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Herbert White, St. Thomas's Hospital; and Arthur Tudor Williams, London Hospital.

* M.R.C.S. Diploma only conferred.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—At the Primary Examination for the Fellowship in Anatomy and Physiology held on May 4th, 5th, 9th, 10th, 11th, and 12th, 135 candidates presented themselves, of whom 28 per cent. were approved (including one lady—Miss Eleanor Davies-Colley, M.D., B.S. Lond.) and 72 per cent. were rejected. The following is a list of the successful candidates:—

John Smeed Bookless, M.B., B.S. Lond., Guy's Hospital; Arthur Edward Brown, Cambridge University and University College; Howard Bullock, M.B., Ch.M. Syd., Sydney and Oxford Universities and Middlesex Hospital; Lewis Cook, M.B. Lond., M.R.C.S., L.R.C.P., Westminster Hospital and King's College; Matthew Corry, M.B., C.M. Edin., Edinburgh and Dublin Universities and Middlesex Hospital; Eleanor Davies-Colley, M.D., B.S. Lond., London School of Medicine for Women; Gordon Doulton East, B.A. Cantab., Cambridge University; Ibrahim Fahmy-El-Minyawi, Cairo and King's College; Allan Rigden Finn, M.D., B.S. Lond., M.R.C.S., L.R.C.P., St. Mary's Hospital and King's College; William Edward Gallie, M.B. Toronto, Toronto University; William Gemmill, M.B., Ch.B. Edin., Edinburgh University and London Hospital; Alexander Gibson, M.A., M.B., Ch.B., Edin., Edinburgh University; Bernard Grainger Goodwin, M.R.C.S., L.R.C.P., Birmingham University; Alfred Leslie Pearce Gould, Oxford University; John Gow, M.B., Ch.B. Manch., Manchester University and London Hospital; Samuel Lewis Graham, M.B., B.S. Lond., M.R.C.S., L.R.C.P., University College and Birmingham University; James Norman Jackson Hartley, Edinburgh University; David Walker Hewitt (Staff-Surgeon R.N.), M.B. R.U.I., Sydney University, University College, Cork, and Middlesex Hospital; Arthur Ernest Iles, M.B., B.S. Lond., M.R.C.S., L.R.C.P., Bristol University and King's College; Harry Lee, B.A., M.B., B.C. Cantab., M.R.C.S., L.R.C.P., Cambridge University, King's College, and Guy's Hospital; Colin Mackenzie, M.A. Cantab., M.R.C.S., L.R.C.P., Cambridge University and Middlesex Hospital; Alfred Fay Maclure, M.D., B.S. Melb., Melbourne University and Middlesex Hospital; Frank Douglas Marsh, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Harold Leonard Meyer, Guy's Hospital; Michael George O'Malley, M.B., B.Ch., B.A.O. R.U.I., University College, Dublin, and Middlesex Hospital; Robin Pearse, M.R.C.S., L.R.C.P., St. Bartholomew's Hospital; Albert Edward Quine, M.B., Ch.B. Manch., Manchester University and London Hospital; Leslie Norman Reece, St. Thomas's Hospital; Charles Gordon Shaw, M.D., B.S. Melb., Melbourne University and Middlesex Hospital; Arthur Joseph Eagleton Smith, Guy's Hospital; Richard Wayland Smith, Edinburgh University and London Hospital; Wilfrid Archer Sneath, M.B., Ch.B. Manch., Manchester University; Frederick Glover Neason Stephens, M.B., Ch.M. Syd., Sydney University and King's College; John Weston Stretton, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Maurice Lawrence Treston, London Hospital; William Henry Trethowan, M.B., B.S. Lond., M.R.C.S., L.R.C.P., Guy's Hospital; Thomas Burdock Vaile, St. Bartholomew's Hospital; and George Harold Lawson Whale, M.D., B.C. Cantab., M.R.C.S., L.R.C.P., Cambridge University and St. Bartholomew's Hospital.

APOTHECARIES' HALL OF IRELAND.—The following candidates, having passed the necessary examinations, have been granted the Licence in Medicine, Surgery, Midwifery, and Pharmacy:—

Le Grande M. Denslow, M.D., Columbia University; Henry Hutchinson, Roderick O'Connor, James B. O'Donoghue, and Harry B. Rossir.

UNIVERSITY COLLEGE HOSPITAL LADIES' ASSOCIATION.—Lady Elizabeth Dawson presided recently at University College Hospital, Gower-street, W.C., over the annual general meeting of the University College Hospital Ladies' Association, and in moving the adoption of the report said that the association met under distinctly encouraging circumstances. The association at present consisted of 670 members, including 322 members of branches affiliated with the association, an increase of 75 despite the fact that there had been a loss of 42. From the new branch which had been started at Pinner the committee hoped to get good results, and in this connexion they must keep before them the necessity of starting new branches in various parts of the country. Having regard to the limitation in receiving patients from any part of the kingdom, she had no doubt those sending such patients would be glad to join branches in their localities if the opportunity was afforded them. It was only by continuous effort that they could hope to make income and expenditure balance. In regard to garments 1197 had been provided. Of that total 212 had been made by a working party in London, 786 by working parties in branches, and 199 contributed by members. The financial support that had been received had been most satisfactory, enabling the committee to not only complete the endowment of one bed by paying a third and final instalment of £400, but also to contribute £100 this year towards the endowment of a second bed. Of the £651 contributed to the funds of the hospital during the year, £151 went towards the maintenance of two beds. The committee had decided to form a junior branch of the association, the subscriptions of whose members would be devoted to the maintenance of a cot. The Hon. Lady Talbot seconded the adoption of the report, which was carried, and an alteration of the rules providing for the establishment of a junior branch was moved by Mrs. Gregory Foster, and seconded by Mrs. Richard Guinness. A vote of thanks to the

chairman having been moved by Mrs. Fredk. Roberts, and seconded by the Hon. Lady Reid, Lady Elizabeth Dawson, after replying, moved, and Major-General the Hon. Sir Reginald Talbot seconded, a vote of thanks to the general committee of the hospital for the use of the hall. Sir Reginald Talbot said it was remarkable that the association, which was only ten years old, had contributed to the maintenance fund of the hospital over £1800, and to the bed fund over £1000, a record which it was safe to say was unequalled by any similar association in London or in the country.

DAMAGES AGAINST A BONESETTER.—An important case was recently heard at the Hull county court before his honour Judge Cyril K. Dodd, K.C., and a special jury, in which a domestic servant named Edith Batchelor, aged 20 years, sought to recover £100 damages from a local bonesetter named John Blackbourne. The plaintiff sued for the damages on the ground that the defendant had been negligent and unskilful in his treatment of her. The plaintiff was represented by Mr. H. T. Kemp, K.C., with Mr. Rowan Hamilton, and for the defendant appeared Mr. E. Shortt, K.C., with Dr. Fleming. In opening before a crowded court and in the presence of a large number of medical men, Mr. Kemp referred to the importance of the case and observed that when a man undertook to treat a patient he was called upon by law to use reasonable and proper skill, and if he, through unskilful treatment, made the injury worse, then he must pay for it. He had no doubt that they would come to the conclusion, after hearing the story of the girl, that the plaintiff had received serious injuries of a more or less permanent character. The treatment of the girl by the defendant had been carried on on the assumption that there was a fracture, and the great point in the case was as to whether or not there was a fracture. An X ray examination by Dr. C. H. Milburn showed that the defendant was wrong in assuming that there was a fracture. The girl now could not put her left foot to the ground and had to go upstairs sideways. Plaintiff stated that in October, 1909, when employed as a housemaid at Sutton, she was carrying a bucket down some steps when she slipped and fell. Dr. Archibald Gillespie found that her left ankle was severely sprained. He placed her foot in cotton-wool bandages, and upon his advice she went to bed, where she stayed for three days. Two days later she travelled in a cab to Hull to the house of her sister, and Dr. Gillespie continued to treat her there in the same way. On Nov. 12th, however, she and her sister visited the house of the defendant, and on being asked by the sister if he thought he could do the ankle any good looked at the foot, but without handling or examining it said that he could treat it and make it all right, but that it would take some time. At the time she went to the defendant's house her foot was still considerably swollen, but not discoloured at all, and her leg was quite straight. The defendant, after informing her that he would treat the foot and make it better, got his wife to hold the limb and twisted it with both hands, causing witness very great pain. The defendant also knocked her heel up and stated that there was a fracture of the ankle. He then fixed a splint on the outside of the limb, and whilst doing so told her that the reason he was placing it on was because of the fracture. The same evening her sister wrote to Dr. Gillespie informing him that she was under the treatment of the defendant. After this plaintiff continued to visit the defendant nearly every day. The splint which the defendant had placed on at the first interview was not moved neither by night nor day for a fortnight. When the defendant did take it off both the leg and foot were very much swollen and her foot was discoloured. Shortly after this the son of the defendant blistered her foot, and later the blister rose up, becoming black, and burst, followed by a discharge of matter. The discharges continued for about three months. On various occasions the defendant applied an electric battery, and once placed her foot and leg up to the knee in a hot oven. Her foot became curled up and her leg would not go out straight. The defendant afterwards blistered her hip which had become stiffer since the splints had been on. Whilst she was under the treatment of the defendant the son gave her the following certificate: "This is to certify that Edith Batchelor is suffering from a fractured leg and ankle and is at present unable to follow her occupation." In February she became an out-patient of the Hull Infirmary, and on March 14th an in-patient, the wound healing splendidly after that. Now she had to walk upstairs sideways. Under cross-examination plaintiff denied that when she first went to the defendant's house her leg was pointing straight down. She got worse under the treatment of the defendant, but she knew that he was not a doctor. Dr. Gillespie said that he had placed elastic pressure on the ankle and bandaged it with cotton-wool. He attended the girl on 15 different occasions altogether, and she would, if the treatment which he meted out to her had been continued, have been back at work in a month or six weeks. At the time that the plaintiff dispensed with his services she was progressing favourably. There was no indication of a fracture and, in his opinion, to place a splint on the leg like the defendant had done was very improper treatment. He regarded the blistering as improper and said he could not imagine it being necessary. An X ray photograph was also produced to prove that there was no fracture. For the defendant it was contended that the assumption that the ankle was fractured did not prove negligence. The jury found for the plaintiff for the full amount claimed, and his honour gave judgment, with costs.

Dr. Raymond Crawfurd will deliver the Fitz-Patrick Lectures on "The King's Evil" at the Royal College of Physicians of London, Pall Mall East, on May 30th and June 1st at 5 P.M. Lecture I.: Origin. Under Plantagenets and Tudors. Lecture II.: With the House of Stuart.

BRISTOL GENERAL HOSPITAL.—The treasurer of the Bristol General Hospital states that £41,312 have been promised towards the special appeal for £45,000, which was recently made by the committee of that institution. This leaves the sum of £3688 still to be obtained, and it is hoped that this will shortly be raised.

ROYAL MINERAL WATER HOSPITAL, BATH.—The annual meeting of the subscribers of the Royal Mineral Water Hospital, Bath, was recently held. The medical report stated that during 1910 the patients admitted numbered 1175, the average number of occupied beds was 145, and the average length of the patients' stay 45 days. The financial statement was satisfactory, and showed the income was £5626; the expenditure amounted to £5412.

SEVENTH INTERNATIONAL CONGRESS OF DERMATOLOGY.—We learn that this congress will take place in Rome from Sept. 18th to 23rd, 1911, and not from Sept. 25th to 29th, as previously announced. This alteration in date has been made by those responsible for the congress in Rome to fit in with the dates of other congresses which will take place there in the latter half of that month. We referred to this congress in THE LANCET of Sept. 17th, 1910, p. 921. The secretary for Great Britain and Ireland is Dr. H. G. Adamson, 9, Weymouth-street, London, W.

THE MEDICAL GOLFING SOCIETY.—The 1911 tournament of this society will be held on Thursday, June 15th, at Canons Park, Edgware, by kind invitation of the Edgware Golf Club. Play will be as follows: 18 holes match play *v.* Bogey under handicap. Class I., handicaps 12 and under. Class II., handicaps over 12. The "Henry Morris" challenge cup and the Medical Golfing Society's gold medal will be awarded for the best return under handicap. A first and second prize and a prize for the best last nine holes will be given in each class. In addition, the medical members of Edgware Golf Club are kindly presenting a prize for the best first nine holes. There will also be a cup presented by Mr. Canny Ryall for the best gross score. Anyone on the Medical or Dental Registers can join by payment of the annual subscription, 5*s*., which includes entrance to the tournament. Entries should be sent on or before Monday, June 12th, to L. Eliot Creasy, honorary secretary and treasurer, The Medical Golfing Society, 36, Weymouth-street, London, W.

MILLER GENERAL HOSPITAL: SPECIAL MATINÉE AT THE PLAYHOUSE.—By the courtesy of Mr. Cyril Maude, who lent his theatre for the occasion, a special matinée was given at the Playhouse on the afternoon of May 12th in aid of the Miller General Hospital for South-East London. The performance was organised by Mr. W. Scott-Scott, who was helped by a notable body of stage favourites, and secured the patronage of a large

number of persons acquainted with the needs of the institution to be benefited. Not a seat in the house remained unsold, and the three hours' programme was a thoroughly enjoyable one. It included *The Twelve Pound Look*, by Mr. J. M. Barrie, which was presented by Miss Lena Ashwell, Mr. Edmund Gwenn, Miss Mary Barton, and Mr. G. C. Calvert. The funds of the Miller Hospital should benefit greatly as the result of the performance.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

National Insurance and Medical Attendance.

Mr. LLOYD GEORGE has issued as a Parliamentary paper a memorandum explanatory of the National Insurance Bill. One passage, which relates to the subject of friendly societies and medical attendance, is in the following terms: "The present system of medical relief as organised by the friendly societies cannot be regarded as entirely satisfactory. Doctors employed by these societies are paid an inclusive fee of about 4s. per member on an average. This fee covers drugs and the cheaper medical appliances, but is insufficient to provide the more costly drugs, the cost of which has to be borne by the doctors themselves. To correct this it is proposed to insert a clause forbidding the societies to enter into any contract which provides for the payment of drugs by an inclusive fee. This will involve a substantial increase in the cost of medical relief, but the funds at the disposal of the societies under the Bill will enable them to meet the additional expense without trenching upon the minimum benefits. Further, the societies will be given the option of handing over this part of their duties to the health committee, on such terms as may be arranged in each case. If the terms arranged or proposed involve a deficit the health committee will be authorised to apply to the Government and the local authority for the payment of the deficit in equal shares; the latter can well afford it, for the scheme must effect a considerable saving in the medical charges now falling on the rates. It must be remembered in this connection that the compulsory character of the scheme secures a contribution towards medical attendance from that class of the population who now, having no society to fall back upon in case of sickness, resort to the Poor-law both for medicine and maintenance. The medical treatment given by societies will be made subject to inspection."

University of Wales (No. 2) Bill.

The purpose of the University of Wales (No. 2) Bill, which has just been introduced in the House of Commons by Sir DAVID BRYNMOR JONES, is "to extend the provisions of the Medical Acts to the University of Wales and graduates in medicine and surgery thereof." The Bill is supported by Lord NINIAN CRICHTON-STUART, Sir FRANCIS EDWARDS, Sir HERBERT ROBERTS, Colonel PRYCE-JONES, and Mr. ORMSBY-GORE.

St. Andrew's Ambulance Association.

St. Andrew's Ambulance Association Order Confirmation Bill has passed through all its stages in Parliament and now awaits the Royal Assent.

HOUSE OF COMMONS.

WEDNESDAY, MAY 10TH.

Adulterated Flour.

Mr. LONSDALE asked the Parliamentary Secretary to the Board of Agriculture whether it was intended to put into operation the powers possessed by the Board of Agriculture under the Merchandise Marks Acts to take proceedings against manufacturers who fraudulently adulterated flour; and, if not, whether he would state the reasons why the department was not carrying out the duty imposed upon it by Parliament for the protection of the public.—Sir EDWARD STRACHEY replied: The Board has no information of any specific case in which it is alleged that an offence has been committed under the Merchandise Marks Acts in connexion with flour.

Mr. LONSDALE: Is it within the province of the Board of Agriculture to make inquiries?

Sir EDWARD STRACHEY: I can assure my honourable friend I shall be only too glad to inquire into this matter if he will only give me the names of any manufacturers who are alleged to have offended. I shall see whether we cannot take action.

The Sale of Milk.

Mr. CHARLES BATHURST asked the Parliamentary Secretary to the Board of Agriculture whether, in view of the dissatisfaction created by prosecutions of dairy farmers for the sale of genuine unadulterated cows' milk containing less than 3 per cent. of butter fat, and also owing to the addition by retailers of skimmed or separated milk to cows' milk containing more than 3 per cent. butter fat, he would consider the advisability of substituting for any official minimum standard the sale of all milk according to its actual quality, adopting different prices according to its butter-fat contents, as was customary on sales to creameries in Ireland and England.—Sir EDWARD STRACHEY answered: The Board has no power to require that milk shall be sold at different prices according to its butter-fat contents.

Milk Legislation.

Mr. BARNSTON asked the President of the Local Government Board whether it was the intention of the Government to introduce a Bill dealing with the milk-supply; and if so, would he promise that the Bill be introduced at an early date so that agriculturists and agricultural bodies might have adequate time to study its provisions.—Mr. BURNS replied: I hope to introduce a Bill on the subject at an early date.

THURSDAY, MAY 11TH.

Red Cross Manual of Instruction.

Mr. RUPERT GWYNNE asked the Under Secretary of State for War whether the manual of instruction for the voluntary aid detachments of the British Red Cross Society had yet been approved; and if not, when this would be done.—Colonel SEELY wrote in reply: This manual is not a War Office manual but is being published under arrangements made by the British Red Cross Society, who would no doubt give the honourable Member the information he desires.

MONDAY, MAY 15TH.

Whole-time Medical Officers of Health.

Sir CHARLES HENRY asked the President of the Local Government Board whether he would instruct that, in the readjustment of districts in counties for sanitary supervision, those whole-time medical officers of health, who previously to the rearrangements held appointments in these districts, should receive consideration in the selection for medical officers for the newly formed district.—Mr. BURNS replied: The selection of the medical officer of health rests with the local authority making the appointment, and the function of the Local Government Board is limited to approval of the appointment. It is shown by experience that local authorities when making fresh appointments upon the formation of new combinations, do give consideration to the claims of officers who have previously given whole-time service, and I doubt whether any general recommendation from the Local Government Board is necessary. I, of course, agree with the view that in making fresh appointments the claims of any efficient officers who may be displaced in consequence of the new arrangements should receive full consideration.

Adulterated Flour.

Mr. LONSDALE asked the President of the Local Government Board whether he would place at the disposal of the Board of Agriculture the information which was in the possession of his department of specific cases of the adulteration of flour by the process of bleaching and the addition of deleterious compounds, with a view to proceedings being taken against manufacturers who resorted to practices which not only involved danger to the public health but defrauded the consumer.—Mr. BURNS answered: The information referred to was supplied to the Board in confidence for the purpose of his inquiry and it could not properly be used in the way suggested.

Housing Accommodation in South Northamptonshire.

Mr. KELLAWAY asked the President of the Local Government Board whether his attention had been called to a recent report of the medical officer of health of Brackley, in South Northamptonshire, which stated that there was a want of decent cottages for labourers; that at present the labourers were compelled to live in old, cramped, and dirty dwellings; that the medical officer of health had been calling attention to this state of things since 1891; that there was plenty of money in the hands of small investors who would build cottages if only land could be obtained at a reasonable price; and, if so, what steps he proposed to take to enable the local authority to obtain land at the value at which it was assessed for local rates.—Mr. BURNS replied: My attention has been called to the report referred to, and I have addressed a communication to the Town Council of Brackley on the subject, pressing on it the necessity of further considering the question of providing houses under Part IV. of the Housing of the Working Classes Act, 1890. The Housing, Town Planning, &c., Act, 1909, effected important amendments designed to facilitate the compulsory acquisition of land by local authorities for the purpose of the erection by them of houses for the working classes, and it has not been shown that the existing powers under the Act are not sufficient to meet all ordinary circumstances.

TUESDAY, MAY 16TH.

Butter Fat in Milk.

Mr. STAINER asked the Parliamentary Secretary to the Board of Agriculture whether the Board could see its way to have an inquiry into the question of the legal 3 per cent. basis of butter-fat as to whether or no this was a fair basis on which to standardise the purity of milk.—Sir EDWARD STRACHEY replied: The Board is considering whether it would be desirable to adopt the suggestion of the honourable Member.

Imported Milk.

Answering Mr. MEYSEY-THOMPSON, Mr. BURNS said: Some 140 analyses have been made during the past three years of milk imported into this country. Only eight samples were reported against and proceedings were taken in three cases, in two of which fines were imposed. Foreign milk used in this country is mainly used by confectioners. It is used for milk chocolate. It is supervised by the medical officer at Southampton. It is also examined at stations on the route to London —at Vauxhall, for instance.

WEDNESDAY, MAY 17TH.

The National Insurance Bill and the Medical Profession.

Mr. ORMSBY-GORE asked the Chancellor of the Exchequer whether he had consulted any representatives of the medical profession with regard to the provisions of the National Insurance Bill affecting doctors; and, if so, whether he would lay upon the table any correspondence or information given by the medical profession with reference to the medical part of the scheme.—Mr. LLOYD GEORGE replied: I consulted several representatives of the profession, and received a deputation from the British Medical Association. I do not propose to lay any correspondence before the House.

Mr. LYNCH: Is the right honourable gentleman aware that a loss of 30 per cent. is likely to fall upon this hard-working profession?—Mr. LLOYD GEORGE: I cannot see how the loss of 30 per cent. can fall upon them when I am providing additional sums for their pay.

Mr. LYNCH: Will the right honourable gentleman go over the figures on the matter which I wish to submit to him?—Mr. LLOYD GEORGE: I shall be very glad to consider them.

Mr. BRADY: Will the right honourable gentleman consult the Irish Medical Association?—Mr. LLOYD GEORGE: I am not aware that the Irish Medical Association have applied to be heard, but I will be glad to talk over the matter with them.

THE NATIONAL INSURANCE BILL.

MR. LLOYD GEORGE'S INTENTIONS.

As we are going to press we have received personal assurances from the Chancellor of the Exchequer as to his intention with regard to the capitation payment to medical men under the insurance scheme. Mr. Lloyd George has provided a sum of £4,200,000 for the provision of medical attendance including drugs, dressings, and appliances used in domiciliary treatment. The calculation is that this will permit the average payment of a capitation fee estimated at 6*s.* per head for each person insured for medical attendance and the drugs, dressings, and appliances used in domiciliary treatment. The amount will be increased on the advice of the Central Insurance Office in districts where the Insurance Commissioners are advised that sickness is excessive. In addition he has made arrangements to provide a sum of £1,000,000 annually for the maintenance of sanatoriums, and in that way removes from the scope of domiciliary treatment a considerable proportion of phthisical patients who would otherwise make serious calls upon the sum available for domiciliary medical attendance and provision of drugs. He has also provided an annual sum of £1,500,000 for maternity benefit, and out of this it is roughly estimated that one-third will be paid to members of the medical profession.

The Chancellor of the Exchequer recognises the desirability of allowing some system of choice of medical men in the case of new participants in the scheme, and looks favourably upon the institution of a wide panel of local medical men willing to serve.

The Central Insurance Office, in giving its approval to arrangements proposed to be made by any approved society or health committee with medical men, and in other matters, will act on the advice of the Advisory Committee to be set up under the Bill; and the Chancellor of the Exchequer recognises that on the Advisory Committee the representation of the medical profession must be adequate; or, as an alternative, that a special Medical Advisory Committee should be constituted.

BOOKS, ETC., RECEIVED.

CORNISH, J. B., LIMITED, 16, St. Ann's-square, Manchester.

Talks with Sanatorium Patients. By Gilbert Heathcote, Medical Officer, Crossley Sanatorium. Price 1*s.* 6*d.* net.

FISCHER, GUSTAV, Jena.

Lehrbuch der Kinderheilkunde. Herausgegeben von Professor Dr. E. Feer, Direktor der Univ. Kinderklinik in Heidelberg. Price, paper, M.11.50; bound, M.12.50.

Die Hodgkinsche Krankheit. Von Dr. Kurt Ziegler, Privatdozent in Breslau. Price M.9.

Vergiftungen durch Tiere und animalische Stoffe. Ein Grundriss der zoologischen Toxikologie für praktische Aerzte und Naturwissenschaftler. Von Friedrich Kanngiesser, Dr. med. et phil., Docent an der Universität Neuchâtel. Price M.1.

HIRSCHWALD, AUGUST, Berlin.

Veröffentlichungen aus dem Gebiete des Militär-Sanitätswesens. Herausgegeben von der Medizinal-Abteilung des Königlich Preussischen Kriegsministeriums.

Heft 46. Beiträge zur Lehre von der sog. "Weilschen Krankheit." Klinische und ätiologische Studien an der Hand einer Epidemie in dem Standorte Hildesheim während des Sommers, 1910. Von Generalarzt Dr. Hecker und Stabsarzt Professor Dr. Otto. Price M.8.

Heft 47. Das Königliche Hauptsanitätsdepot in Berlin. Price M.2.

Heft 48. Ueber ein Eiweissreagens zur Harnprüfung für das Untersuchungsbesteck der Sanitätsoffiziere. Vorträge und Berichte aus der Sitzung des Wissenschaftlichen Senats bei der Kaiser Wilhelms-Akademie für das militärärztliche Bildungswesen am 6 Mai, 1909. Zusammengestellt in der Medizinal-Abteilung des Königlich Preussischen Kriegsministeriums. Price M1.60.

LONGMANS, GREEN, AND CO. London, New York, Bombay, and Calcutta.

Treatment of Neurasthenia by Teaching of Brain Control. By Dr. Roger Vittoz. Translated by H. B. Brooke. Price 3*s.* 6*d.* net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

COUTTS, D. K., F.R.C.S. Eng., M.B., B.S. Lond., has been appointed Honorary Assistant Surgeon to the Norfolk and Norwich Hospital.

CURRIE, J. R., M.D. Glasg., D.P.H., has been appointed Medical Officer of Health of Fife.

GIBSON, ALEXANDER G., M.D. Oxon., M.R.C.P. Lond., has been appointed Honorary Assistant Pathologist to the Radcliffe Infirmary, Oxford.

HALLAM, PHILIP, M.B., Ch.B. Edin., has been appointed District Medical Officer by the Williton (Somerset) Board of Guardians.

MALLESON, H. C., L.R.C.P. Lond., M.R.C.S., L.D.S. Eng., has been appointed Dental Surgeon to Christ's Hospital (Bluecoat School), Horsham.

MITCHELL, ALEXANDER JOHN, M.D., Ch.B. Glasg., has been appointed District Medical Officer by the Gloucester Board of Guardians.

MOULD, G. T., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Assistant in the Refraction Department for School Children, Royal London Ophthalmic Hospital.

PONTON, JOHN ALFRED WILLIAM, M.B., B.Ch., B.A.O. Dub., has been appointed Medical Officer of Health for the Ottery St. Mary (Devon) Urban District Council.

SHEPHERD, THOMAS WILLIAM, L.R.C.S. Edin., L.S.A. Lond., has been appointed District Medical Officer by the Launceston (Cornwall) Board of Guardians.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BANBURY, HORTON INFIRMARY.—House Surgeon. Salary £80 per annum, with board and residence.

BARNSLEY, BECKETT HOSPITAL.—Second House Surgeon, unmarried. Salary £100 per annum and all found.

BENENDEN, KENT, NATIONAL SANATORIUM.—Assistant Medical Officer, unmarried. Salary £100 per annum, with board, lodging, and washing.

BIRKENHEAD BOROUGH HOSPITAL.—Junior Resident House Surgeon. Salary £80 per annum, with board and washing.

BOOTLE BOROUGH HOSPITAL.—Honorary Physician.

BRIGHTON, ROYAL SUSSEX COUNTY HOSPITAL.—Assistant Pathologist. Salary £100 per annum, with board, residence, and laundry.

BURY INFIRMARY.—Senior House Surgeon and Junior House Surgeon. Salary £110 and £80 per annum respectively, with board, residence, and washing.

CANTERBURY, KENT AND CANTERBURY HOSPITAL.—House Physician, unmarried. Salary £70 per annum, with board, lodging, and washing.

CAPE TOWN, SOUTH AFRICAN COLLEGE.—Professor of Physiology. Salary £500 per annum.

CHELTENHAM GENERAL HOSPITAL.—House Physician, unmarried. Salary £80 per annum, with board, lodging, and washing.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Laryngologist.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House Surgeon. Salary £80 per annum, with rooms, board, washing, and attendance.

DEVONPORT, ROYAL ALBERT HOSPITAL.—Assistant House Surgeon for six months, unmarried. Salary at rate of £50 per annum, with board, apartments, and laundry.

EALING, KING EDWARD MEMORIAL HOSPITAL.—Physician, Surgeon, Gynæcologist, and Laryngologist.

FINCHLEY, URBAN DISTRICT OF.—Medical Officer of Health and School Medical Officer. Salary £350 per annum.

HACKNEY UNION INFIRMARY, Homerton.—Second Assistant Medical Officer, unmarried. Salary £120 per annum, with rations, apartments, washing, and attendance.

HAMPSHIRE COUNTY COUNCIL.—Assistant County Medical Officer of Health. Salary £250 per annum.

HASTINGS, EAST SUSSEX HOSPITAL.—Assistant House Surgeon. Salary at rate of £50 per annum, with rooms, board, and washing.

HELLINGLY, EAST SUSSEX COUNTY ASYLUM.—Locum Tenens Assistant Medical Officer for about four and a half months. Salary 4 guineas a week, with board, lodging, washing, &c.

INDIAN MEDICAL SERVICE, India Office, London.—Twelve Commissions in His Majesty's Indian Medical Service.

LANCASHIRE EDUCATION COMMITTEE.—School Medical Inspector. Salary £250 per annum.

LEEDS HOSPITAL FOR WOMEN AND CHILDREN.—House Surgeon for six months. Salary at rate of £50 per annum, with board.

LEICESTER INFIRMARY.—Assistant House Physician for six months. Salary at rate of £60 per annum, with board, apartments, and washing.

LIVERPOOL INFIRMARY FOR CHILDREN CLINICAL SCHOOL.—Resident House Physician. Salary at rate of £60 per annum, with board and lodging.

LONDON HOSPITAL, Whitechapel, E.—Medical Registrarship. Salary £100 per annum. Also Surgical Registrarship. Salary £100 per annum.

LONDON MISSIONARY SOCIETY.—Three Medical Men for Missionary Service.

MACCLESFIELD GENERAL INFIRMARY.—Senior House Surgeon. Salary £100 per annum, with board and residence.

MANCHESTER, ST. MARY'S HOSPITALS FOR WOMEN AND CHILDREN.—Two House Surgeons. Salary at rate of £50 per annum, with board and residence.

MANCHESTER, HULME DISPENSARY, Dale-street, Stretford-road.—House Surgeon, unmarried. Salary £150 per annum, with rooms.

MARGATE, ROYAL SEA BATHING HOSPITAL FOR SURGICAL TUBERCULOSIS.—Junior Resident Surgeon. Salary £80 per annum, with board and residence.

NEW ZEALAND GOVERNMENT MENTAL HOSPITALS (LUNATIC ASYLUMS).—Senior Assistant Medical Officer. Salary £300. Also Three Junior Assistant Medical Officers, all unmarried. Salary £250, with board, lodging, and washing in each case.

NORWICH, NORFOLK AND NORWICH HOSPITAL.—Assistant House Surgeon for six months. Salary £20, with board, lodging, and washing.

NOTTINGHAM CHILDREN'S HOSPITAL.—House Surgeon (female) for six months. Salary at rate of £100 per annum, with apartments, board, and washing.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House Surgeon. Salary £100, with board, lodging, and washing. Also Locum Tenens. Salary at rate of £3 3s. per week, with board, lodging, and washing.

NOTTINGHAM WORKHOUSE INFIRMARY.—Assistant Resident Medical Officer, unmarried. Salary £130 per annum, with apartments, board, washing, and attendance.

PEMBROKESHIRE COUNTY COUNCIL.—County Medical Officer of Health. Salary £400 per annum.

PORTSMOUTH, ROYAL PORTSMOUTH HOSPITAL.—House Physician for six months. Salary £75 per annum, with board, &c.

PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham, N.—Honorary Physician or Surgeon to X Ray and Electrical Department. Also Junior House Physician for six months. Salary £50 per annum, with residence, board, and laundry.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Resident Medical Officer for four months. Salary at rate of £60 per annum, with board, residence, and washing.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—House Surgeon for six months. Salary at rate of £80 per annum, with board, residence, and washing.

ROYAL EAR HOSPITAL, Dean-street, Soho, W.—House Surgeon. Salary £40 per annum. Also Assistant Surgeon.

ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Assistant Surgeon.

ROYAL LONDON OPHTHALMIC HOSPITAL (MOORFIELDS EYE HOSPITAL), City-road, E.C.—Senior House Surgeon, Second House Surgeon, and Third House Surgeon for eight months. Salary, Senior House Surgeon at rate of £100 per annum, Second House Surgeon at rate of £75 per annum, and Third House Surgeon at rate of £50 per annum, all with board and residence. Also Two Refraction Assistants. Salary at rate of £25 per annum, with lunch.

ST. MARY'S HOSPITAL, London, W.—Resident Assistant Anæsthetist for six months. Salary at rate of £100 per annum, with board and residence.

ST. THOMAS'S HOSPITAL.—Physician-in-Charge of Out-patients.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Junior House Surgeon for six months. Salary £80 per annum, with board, residence, and allowance for laundress.

SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—Junior House Surgeon for six months. Salary £60 per annum, with rooms, board, and washing.

STROUD GENERAL HOSPITAL.—House Surgeon. Salary £100 per annum, with board, lodging, and washing.

SWANSEA GENERAL AND EYE HOSPITAL.—House Physician for six months. Salary £75 per annum, with board, washing, and attendance.

TAUNTON, SOMERSET AND BATH ASYLUM, Cotford.—Assistant Medical Officer, unmarried. Salary £140 per annum, with apartments, board, washing, attendance, &c.

TAUNTON, TAUNTON AND SOMERSET HOSPITAL.—House Surgeon. Salary £120 per annum, with board, lodging, and laundry.

WAKEFIELD GENERAL HOSPITAL.—Junior House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and washing.

WEST AFRICAN MEDICAL STAFF.—Appointments to this Service at salary of £400 per annum.

WEST HAM UNION INFIRMARY, Whipps Cross-road, Leytonstone, N.E.—Fourth Assistant Resident Medical Officer. Salary £120 per annum.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Surgeon for six months. Salary £80 per annum, with board, rooms, and laundry.

WOOLWICH TUBERCULOSIS DISPENSARY.—Medical Officer. Salary £250 per annum.

YORK DISPENSARY.—Two Resident Medical Officers, unmarried. Salary £140 per annum, with board, lodging, and attendance.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Fillongley, in the county of Warwick; at Fareham, in the county of Hants; and at Caton, in the county of Lancs.

THE Secretary of State for the Home Department, Whitehall, S.W., gives notice of a vacancy for a Medical Referee (Ophthalmic Cases) under the Workmen's Compensation Act, 1906, for County Court Circuits Nos. 24, 30, and 31, covering the whole of South Wales.

Births, Marriages, and Deaths.

BIRTHS.

DENYER.—On May 9th, at Albion-street, Hull, Yorkshire, the wife of Stanley E. Denyer, C.M.G., M.D., M.A. Cantab., F.R.C.S. Eng., of a son.

WATERFIELD.—On May 10th, at the residence of her father, Blyburgate House, Beccles, Suffolk, the wife of Noël E. Waterfield, F.R.C.S., of the Sudan Medical Service, of a son.

DEATHS.

LIGERTWOOD.—On May 10th, at Tedworth-gardens, S.W., Thomas Ligertwood, C.B., K.L.H., M.D., R.A.M.C., late Physician and Surgeon to the Royal Hospital, Chelsea, aged 81 years.

MARTINEAU.—On May 11th, Arthur Martineau, M.R.C.S., L.R.C.P., Assistant Medical Officer at Bodmin County Asylum, aged 36 years.

Notes, Short Comments, and Answers to Correspondents.

GARDEN SUBURBS.

THERE was a time, not so long ago, when in regard to the mental and moral make up of man heredity was accorded nearly the whole of the responsibility, and the powerful forces of environment were almost entirely neglected. The pendulum has recently been swinging in the opposite direction, and environment has come into its own, if not to more than its own, as a prime factor. But if mental and moral environment are such potent influences, as undoubtedly they are, it is important also to pay close attention to the material environment. Some little time ago this fact was recognised so far as the labouring classes are concerned, and many laudable efforts have been made, and are still making, to house them under conditions less nearly resembling those of cattle. There is, however, a large and important class of the population for whom until recently but little has been done—the clerk, the less financially prosperous business man, and the members of those professions whose work, being of a more or less academic character, fails, save in very exceptional instances, of a proportionately adequate reward—viz., the school teacher, the journalist, the literary man, &c. But there are signs of an awakening in this respect. The "garden city" or "garden suburb" idea aims to supersede the monotonous and depressing environment of long rows of deadly dull "villas," void of any shred of beauty or individuality, by settlements of individualised houses separated from one another by garden spaces, and lining winding walks and leafy ways rather than on tiring streets running straight and foursquare. The Hampstead Garden Suburb is a notable example; a more recent one still in earliest infancy is the Romford Garden Suburb in Essex. Barely 12 miles from the heart of London, with an excellent train service and a new and expressly constructed station of its own, we find a large estate on the site of Gidea Park, which has been a real park for several hundred years, and whose historic house, Gidea Hall, still stands in its midst, to be utilised by and by for some public service to the new community. Through the centre of the estate extend the Romford golf links. Open and yet fully wooded, with charming landscapes in every direction, no more beautiful site could have been chosen. And the National Housing and Town Planning Council is proceeding along wise lines. Through the generosity of Sir Herbert Raphael, Bart., M.P., who has provided valuable prizes for a competition among architects and landscape gardeners as to the best types of house and the best utilisation of the site, the first talent for the construction of such a suburb and of such residences of various classes therein as shall combine beauty with utility is rendered available for choice. A hundred and forty houses and cottages of varying types are now being constructed from plans submitted by some 300 architects in the section adjoining Raphael Park, a recent gift of Sir Herbert Raphael to Romford, and in June an exhibition of these will be held and an award of 1000 guineas in prizes will be declared. Viewed as a whole, the enterprise is in every way praiseworthy, but there is evidence on the part of some of the architects of a tendency to subordinate utility and convenience to decorative effect in place of decorating to the best advantage that which is the essential feature on the score of utility. A tasteful planning of the living rooms below can hardly compensate for an extremely sloping roof, for instance, that makes the upstairs passages too low for an ordinary person to traverse without bending the head. Moreover, we do not quite agree in the wisdom of placing all the shops at the extreme edge of the estate near the station, so that those on the farther edge would have to cross the entire estate to get to them. Surely a central square, which might be utilised also for open-air cafés after the continental style, with a central garden would be a more convenient disposition on the whole. It is not intended in this estate to insist on purchase of a house in order to become a resident on the estate. Houses will be to let also—a more satisfactory provision for many of those for whose especial benefit such a suburb is created. It is greatly to be regretted that architects generally will not realise the necessity for cupboards in every bedroom. Some of the houses so far erected at Gidea Park are well supplied in this way; others are deficient. The necessity also for an abundance of light as well as air in rooms is sometimes overlooked. The Gidea Park estate marks, however, a great advance; and inasmuch as what has been so far done is merely experimental, there is yet time to avoid many pitfalls.

A MEDICAL MUSICIAN.

MEDICAL men who have leisure for the cultivation of the Muses are but few in number, though the names of certain poets, artists, and musicians who are on the medical roll will at once occur to most of our readers. In Australia a medical man in active practice finds

time for musical composition. Mr. Oliver Penfold, the practitioner in question, is the President of the Bendigo District Medical Society, and we have received from him a setting of his own composition of Herrick's immortal song, "Gather ye Rosebuds while ye may." Mr. Penfold treats the words as a dance song, or what an Elizabethan would have called a Balet, and we cannot help thinking that he had in his mind the metre of the old dance song "Here we go round the Mulberry Bush" when he repeated the "while ye may" of the first line. But the music reflects both the gaiety and the undercurrent of sadness of the words, the latter being skilfully indicated by a modulation into the relative minor of the dominant.

THE FOUNDER OF "THE LANCET."

To the Editor of THE LANCET.

SIR,—The consensus of opinion at the time when the great Hounslow flogging case was being publicly discussed was not wholly in favour of the action of Wakley, the famous coroner. In Thackeray's "Book of Snobs," Chapter XXII., on Radical Snobs, this passage will be found:—"Perhaps after all there is no better friend to Conservatism than your outrageous Radical snob. ..... For instance, although I hate military flogging as the most brutal and odious relic we have left of the wicked torturing of old times, and have a private opinion that officers of crack dragoon regiments are not of necessity the very wisest of human creatures, yet when I see Quackley the coroner giving himself sham airs of patriotism and attacking the men for the crime of the system (of which you and I are as much guilty as Colonel Whyte unless we do our utmost to get it repealed), I feel myself led over to the brow-beaten side, and inclined to take arms against Quackley!" Thackeray was an enormous and original man, but here his words probably are the simple echo of the view held in military circles—viz., that, though an abuse existed, its removal ought not to be loudly insisted upon by a Democrat; rather it should await a slow death in accordance with official procedure. Such views still obtain.

I am, Sir, yours faithfully,

May 15th, 1911. W. R.

A SWALLOWED DENTURE.

IT is difficult to believe that anyone could swallow three artificial teeth on a gold plate without knowing it and without being aware of any resulting inconvenience. Mr. John Troutbeck, the coroner for the South-Western District, confessed to surprise at such an occurrence to a Battersea jury on Monday, May 15th. The teeth had been worn by the wife of a labourer who died unexpectedly on the night of Thursday, May 11th, after suffering, in the opinion of her friends and herself, from dropsy and a weak heart, complicated by a cough which the deceased had attributed to chronic bronchitis. It was known that she wore three artificial teeth on a gold plate, but it was not suspected that she had swallowed them. The two witnesses who were called—the widower and a female neighbour—seemed surprised that any questions should be asked concerning the teeth by the coroner. Both these witnesses were in the position—now rare—of being unable to read, and had to repeat after the coroner's officer the formula which transforms a common statement into legal evidence. It may be that to them there was something of the mysterious in artificial teeth. The husband said that he did not know the teeth were not still in his wife's mouth. She had never said she had missed them, nor had she made any complaint respecting them. Dr. R. S. Trevor, pathologist at St. George's Hospital, who made the necropsy, stated that he found the teeth in the gullet, at the upper end of which the edges of the gold plate had formed two ulcers. A marked abscess had been produced at the top of the gullet. The teeth did not fit the mouth because the natural tooth to which they had been hooked on the left had broken off and the tooth on the other side had decayed. The woman probably swallowed the plate in her sleep three or four days before her death, if not longer. The coroner said that it was difficult to understand how she could have swallowed it and not have been anxious about it. Dr. Trevor, assenting, gave the cause of death as suffocation from acute dropsy of the larynx, as the result of the tooth-plate having become embedded in the gullet. The coroner said there was nothing to suggest that it was other than an accident, and a verdict was returned accordingly.

ANTI-TUBERCULOSIS POSTERS IN TRINIDAD.

WE have received from the Trinidad Association for the Prevention and Treatment of Tuberculosis a bundle of posters conspicuously printed in red ink, which are intended to be stuck up in public places throughout the island, for the instruction of the inhabitants in the elementary principles of tuberculosis prevention. Each poster is about 2 ft. 6 in. long and nearly 2 ft. broad, and on it are printed in bold letters one or two simple maxims which even a child or an unlettered native could scarcely fail to grasp. The legends on the seven posters sent to us read as follows, and each is headed by the words "Prevention of Tuberculosis": "Keep your windows open: fresh air and sunlight kill the germs of tuberculosis." "Ventilate your house freely: it is best to sleep with the window open." "Tuberculosis (or consumption) is infectious: the poison is in the spit." "Don't put pins in your mouth: they can easily carry infection from the sick to the healthy." "The spit of a consumptive person is very dangerous: it contains the germs of tuberculosis." "Don't spit in public places: tuberculosis is spread by careless spitting." "Hold your hand up to your mouth and nose when you cough or sneeze, to prevent infectious spittle from escaping in the air others breathe." Such posters as these are, of course, no new idea, for in the United States they have been scattered broadcast for some time past, and there are probably few American youths, even in remote country districts, who are not familiar with even larger and more lurid specimens of antituberculosis literature. But this method of popular education has much to commend it, and there is reason to believe that, even if it has been a little overdone in certain States, good fruit has already been born of it in America. The Trinidad posters seem better suited to catch and hold the attention of ignorant persons than the laconic warning "Do not spit" which decorates the public vehicles of this country. With a few obvious alterations in phrasing we think they might well be adopted by our health authorities in crowded city quarters as a small but useful part of the crusade against tuberculosis.

A WARNING.

To the Editor of THE LANCET.

SIR,—Through the medium of your paper may I ask the medical men of Kingston to refrain from accepting either of the following appointments until the members of the Kingston and District Medical Society and the local division of the British Medical Association have expressed their opinions of them: (1) Medical examiner of candidates for the Hearts of Oak Society for this district; (2) medical officer to a Hearts of Oak medical club recently formed here.

I have held the appointment of local medical examiner for 18 years, and am also medical officer of the local Hearts of Oak men's club, which has existed since 1874. But now a disagreement has arisen with the Hearts of Oak Society, because with the aid of the Medical Defence Union I have opposed their agent, who, though living in Richmond, has canvassed for members to form a new medical club in Kingston.

I am, Sir, yours faithfully,

Kingston-hill, May 15th, 1911. W. E. ST. L. FINNY.

THE VALUE OF CARICATURE.

SCENE: A cow in a French law court. The Judge, holding under the muzzle of the cow a jug labelled "milk," says, "What is it now really?" addressing the animal. "I don't know at all," replied the poor puzzled cow. This amusing caricature is headed "Crushing Testimony," and is reproduced in *Æsculape* in the April issue from the daring pages of *L'Assiette au Beurre*, the original being drawn by Caran d'Ache. We understand that *L'Assiette au Beurre*, never surely without a large body of readers, with its issue on "Les Laitiers" secured an "énorme retentissement." The article in *Æsculape* is entitled "Le Lait Meurtrier," and reproduces nine amusing caricatures all taken from the same source.

IN the annotation on "Medical Letter Writing" in THE LANCET of May 6th the belief was expressed that Professor Oppenheim's "Letters on Psychotherapeutics" had been translated into English. Messrs. Otto Schulze and Co., of Edinburgh, now inform us that this is the case, and that they have published a translation by Dr. Alex. Bruce, editor of the *Review of Neurology and Psychiatry*, in a second edition, at 1*s.* net.

Senex inquires the name of a small inexpensive non-technical book on "the management of health at the middle period of life" which could be read with advantage by a lady patient.

T. L.—From the data supplied by our correspondent it is not possible for us to say whether his patient's condition was due to the boiler or to some other cause.

A Subscriber.—This will only be the case in the treatment of insured people.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced for April and May, 1911:—

April–October.—Rome Exhibition (United Italy's Jubilee).
,, 29th–Oct. 26th (Turin).—International Exhibition.
May 3rd–Oct. 31st (Glasgow).—Scottish Exhibition.
,, 6th–Oct. 31st (Dresden).—International Hygiene Exhibition.
,, 12th–Oct. 31st (London, Crystal Palace).—Festival of Empire Imperial Exhibition. (Profits to King Edward VII. Hospital Fund.)
,, 13th–27th (London, Agricultural Hall).—Chemical Exhibition.
,, 18th–June 3rd (London).—Royal Naval and Military Tournament.
,, 18th–October 31st (London, Shepherd's Bush).—Coronation Exhibition.

May 19th–Oct. 31st (London).—Earl's Court Exhibition.
,, 23rd–25th (Atlantic City).—American Gynæcological Society.
,, 25th–27th (Boston).—American Dermatological Association.
,, 29th–31st (Philadelphia).—American Laryngological Association.
,, 30th (The Hague).—International Congress on Opium.
,, 30th–June 1st (Niagara Falls, Ont.)—Ontario Medical Association.
,, 30th–June 2nd (London).—National Conference on the Prevention of Destitution.
,, (Washington).—Conference on the Protection of Industrial Property. (Question of False Marking of Goods.)
June 5th–8th (Kolberg, Prussia).—Fifth International Congress of Thalassotherapy.
,, 7th–9th (Montreal).—Canadian Medical Association.
,, 7th–10th (Munich).—Fourteenth Congress of the German Gynæcological Society.
,, 12th and 13th (Dresden).—Eighth Tuberculosis Physicians' Meeting.
,, 13th (Cork).—Annual Meeting of the Irish Medical Association.
,, 19th–22nd (Denver, Col.)—Sixty-seventh Annual Meeting of the American Medico-Psychological Association.
,, 26th and 27th (Los Angeles, Cal.).—Thirteenth Annual Meeting of the American Proctologic Society.
,, 27th–30th (Los Angeles, Cal.).—American Medical Association.
,, (Montreal).—American Climatological Society Meeting.
June, July, and August (Squirrels Heath, Romford).—Town Planning and Modern House and Cottage Exhibition.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).

MONDAY.

ODONTOLOGICAL SECTION (Hon. Secretaries—R. B. Dowsett, W. W. James): at 8 P.M.

Annual Meeting.—Election of Officers and Council for Session 1911–1912.

Paper:
Dr. Sim Wallace: Some Observations and Experiments on Bread, with Special Reference to the Causation and Prevention of Dental Caries.

TUESDAY.

MEDICAL SECTION (Hon. Secretaries—A. F. Voelcker, Sir John F. H. Broadbent, Bt.): at 5.30 P.M.

Annual Meeting.—Election of Officers and Council for Session 1911–1912.

Address by the President (Dr. Mitchell Bruce).

FRIDAY.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN (Hon. Secretaries—J. P. Lockhart Mummery, T. R. Whipham, G. S. Haynes) at 11, Chandos-street, W.: at 4.30 P.M.

Annual Meeting.—Election of Officers and Council for Session 1911–1912.

Adjourned Discussion
On Dr. Milne's paper—Measles, its Treatment and Prevention The Discussion will be opened by Dr. J. D. Rolleston, followed by Dr. W. Bezly Thorne, Dr. F. Foord-Calger, Dr. John Biernacki, and Dr. W. J. Turner.

Cases will also be shown

EPIDEMIOLOGICAL SECTION (Hon. Secretaries—W. H. Hamer, G. S. Buchanan): at 8.30 P.M.

Annual Meeting.—Election of Officers and Council for Session 1911–1912.

Papers:
Dr. A. Ransome, F.R.S.: The Scientific Uses of the Notification of Disease.
Dr. F. E. Batten: The Epidemiology of Poliomyelitis.

SATURDAY.

SECTION OF BALNEOLOGY AND CLIMATOLOGY (Hon. Secretaries—Alexander Manuel, F. A. de T. Mouillot).

Annual Provincial Meeting at Folkestone.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND, 11, Chandos-street, Cavendish-square, W.

TUESDAY.—3 P.M., Dr. N. Raw: The Treatment of Puerperal Insanity with Antistreptococcic Serum.—Dr. M. E. Paul: Pathological and Prolonged Sleep. Cinematograph Demonstration of Some Scientific Films of General Medical Interest.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. G. Little: Clinique (Skin). 5.15 P.M. Lecture:—Mr. H. B. Robinson: On Some Cases of Jaundice in which Opening of the Duodenum was Required.
TUESDAY.—4 P.M., Dr. P. Parkinson: Clinique (Medical). 5.15 P.M., Lecture:—Dr. N. Walker (Edinburgh): The Economics of Dermatology.
WEDNESDAY.—4 P.M., Mr. D. C. L. Fitzwilliams: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. A. Routh: Metrorrhagia.
THURSDAY.—4 P.M., Dr. J. Cunning: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. A. Lieven (Aix-la-Chapelle): Treatment of Syphilis Bearing on the Results Obtained by Ehrlich's "606."
FRIDAY.—4 P.M., Mr. H. L. Eason: Clinique (Eye).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. Dr. Simson: Diseases of Women. 12 noon: Pathological Demonstration:—Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Bidwell: Treatment after Abdominal Operations.
TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 11.30 A.M.: Mr. Etherington-Smith: Demonstration of Minor Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Low: Filariasis.
WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Dr. Simson: Gynæcological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Simson: Diseases of Women. 5 P.M., Lecture:—Dr. Beddard: Practical Medicine. (Lecture II.)
THURSDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12.15 P.M., Lecture: Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 3 P.M., Lecture:—Dr. R. H. Cole: General Paralysis (at Hanwell Asylum).
FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Davis: Some Points in Treatment of Middle Ear Disease.
SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Medical Registrar: Demonstration of Cases in Wards. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. E. Gillespie), 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson).
TUESDAY.—Clinic:—10 A.M., Medical Out-patient (Dr. A. G. Auld). 2.30 P.M., Operations. Clinics:—Surgical (Mr. Howell Evans); Gynæcological (Dr. A. E. Giles). 3.30 P.M., Medical In-patient (Dr. A. J. Whiting).
WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Dr. A. H. Pirie). 4.30 P.M., Special Demonstration:—Mr. R. P. Brooks: Selected Eye Cases.
THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel). 4.30 P.M., Lecture:—Mr. J. H. Evans: Renal and Ureteric Pain.
FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie).

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.30 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.
TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. R. Carling: Surgery. 4.15 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 3.15 P.M., Special Lecture:—Mr. Carling: Inflammatory Conditions of Bones.
WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye. Special Lecture: 5 P.M., Mr. I. Back: Malignant Disease of Breast.
THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4.30 P.M., Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.
FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 3.15 P.M., Special Lecture:—Dr. R. Bradford: Gastric Ulcer.
SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

HOSPITAL FOR SICK CHILDREN (UNIVERSITY OF LONDON), Great Ormond-street, W.C.

TUESDAY.—5.15 P.M., Demonstration:—Mr. O. L. Addison: Diseases of Joints—Tuberculosis Hip, Continued Course, Treatment (Special Post-Graduate Course.)
FRIDAY.—5.15 P.M., Demonstration:—Mr. O. L. Addison: Diseases of Joints—Tuberculous Knee, Elbow, Shoulder, &c. (Special Post-Graduate Course.)

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Clinical Lecture:—Dr. F. Batten: Epidemic Paralysis.
FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. F. Buzzard.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.

WEDNESDAY.—4 P.M., Lecture:—Dr. Perkins: The Significance, Diagnostic and Prognostic, of the Physical Signs in Pulmonary Tuberculosis.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.

TUESDAY.—3.45 P.M., Lecture;—Dr. D. McKenzie: Ear.
FRIDAY.—3.30 P.M., Special Clinical Lecture:—Dr. A. Wylie: Dysphagia and Broncho-Œsophagoscopy.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, 49, Leicester-square, W.C.

TUESDAY.—5 P.M., Dr. W. K. Sibley: Hyperæmia in the Treatment of Skin Diseases. (Post-Graduate Lecture.)

THURSDAY.—5 P.M., Dr. M. Dockrell: Undiagnosed Syphilides. (Post-Graduate Lecture.)

UNIVERSITY OF LONDON (UNIVERSITY COLLEGE), Institute of Physiology.

FRIDAY.—4.30 P.M., Dr. W. M. Bayliss: The Mechanism of Oxidation in Plants and Animals. (Lecture IV.)

ANCOATS HOSPITAL, Manchester.

THURSDAY.—4.15 P.M., Dr. W. J. S. Bythell: Therapeutic Uses of X Rays. (Post-Graduate Clinic.)

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (22nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (23rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London 2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (24th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.20 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (25th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (26th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor. 9 A.M., Major, 2 P.M.).

SATURDAY (27th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.) Hospitals operations are performed daily.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

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THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free from THE LANCET Offices, have been reduced, and are now as follows:—

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, May 17th, 1911.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
May 11	29·81	N.E.	...	115	72	51	53	55	Fine
,, 12	29·77	N.E.	0·39	92	67	50	50	51	Overcast
,, 13	29·67	E.	0·07	110	73	51	55	56	Overcast
,, 14	29·64	S.W.	0·06	74	59	54	56	56	Raining
,, 15	29·71	S.W.	0·27	109	65	54	54	56	Overcast
,, 16	29·84	E.	...	108	72	55	56	60	Fine
,, 17	29.92	E.	...	111	70	54	57	61	Fine

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